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ARTERIOSCLEROSIS

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NEW YORK

The term "arteriosclerosis" is used in medicine in many ways, some of them mischievously misleading. Thus, "cerebral arteriosclerosis" is used to describe the altered personality and failing mental powers of the aged and the shrinking of the cerebral cortex seen in brains of many people after the age of 40, and in all over 70. Actually, this disseminated focal atrophy of the cerebral cortex, with its accompanying clinical features, is in no way related to the arteriosclerosis which leads to infarctions or hemorrhages in the brain. It is the alopecia or white hair of the nervous system. Anyone who has seen some of his bald-headed friends blush need not be surprised to find that special tissues of ectodermal origin may involute and disappear in adults even though the circulation of the tissue is excellent.

In cardiology it is a common error to diagnose cardiac enlargement or failure as being due to "arteriosclerotic heart disease", especially when valve lesions, hypertension or Graves' disease is not present. So far as the pathologist can determine, there is no arteriosclerotic heart disease save narrowing and occlusion of the epicardial branches of the coronary arteries, with resulting patchy or massive myocardial necrosis. The only "arteriosclerotic heart disease" is coronary occlusion; if we can not demonstrate evidence of myocardial necrosis, or pain due to myocardial ischemia, we can expect to find no significant relation between heart failure and arteriosclerosis of the coronary bed. Any other sort of "arteriosclerotic heart disease" is pure buncombe, and more ridiculous than the old term "chronic myocarditis" for non-valvular heart disease. Hypertrophied hearts that fail have excellent perfusibility unless they have coronary occlusion, in the usual meaning of that term[1].

Clinically, arteriosclerosis is almost always used as synonymous with atheromatous intimal degeneration, which is the arterial condition that most commonly causes disease and death. But the pathologist recognizes several forms of arterial degeneration—some purely aging processes, others of more complex and obscure origin. The normal or usual aging process is called fibrosis with ectasia (dilatation). This loss of elastic and muscular elements in the media is analogous to the skin changes which cause wrinkling, or the changes in the cartilages which make them susceptible to calcification and fibrillary degeneration in adult life. It leads to the elongation, widening and tortuosity which the radiologist so often notes under the fluoroscope; to the large tortuous temporals which we see, often before the age of 30, on our friends or ourselves; or to the tortuous brachials noted in our patients. This change is diffuse, bilaterally symmetrical and harmless. It makes the arteries less elastic, thus tending to raise systolic pressure; but the widening and lengthening compensate to some degree by creating a big reservoir of low elasticity to replace the small and highly elastic reservoir which we had in youth. This change does not seem to predispose to

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1. Dock, W.: Capacity of the Coronary Bed in Cardiac Hypertrophy, J. Exper. Med. 74:177-186 (Sept.) 1941.

other lesions; in the coronaries it makes occlusion less likely, since it may double the lumina of the epicardial branches. People with tortuous temporal arteries may have coronary occlusion, but many who have this condition by 30 belong to families notably long-lived, and their grandparents enjoy good health after showing this lesion for half a century.

There are other types of medial disease. Some, such as Moenckeberg's calcification, are also due to aging and rarely lead to any break or blockade in the vessel, while others, such as medial mucinous degeneration, seem to be due to some toxic or local vascular lesion and predispose to rupture or dissection of the aortic wall. All these types are included in arteriosclerosis, as is also the intimal thickening of disused vessels, like the ductus arteriosus, or the uterine vessels after the menopause.

Where does the atheromatous change in the intima fit into the picture? Certainly it is not like fibrosis with ectasia, a diffuse and usual aging change occurring in all old vertebrates. Most mammalian species and some human races rarely show such atheroma even in extreme old age. Chinese pathologists in Pekin[2] have done several thousand autopsies and found aortas quite different from those we see in people aged 20 to 80.

Atheromas are spots, focal lesions scattered in the vascular bed, but most numerous and largest in the lower abdominal part of the aorta and in the iliac arteries. They are common in coronary arteries and in the arteries of the legs. While some hypertensive individuals, after decades, show very little atherosclerosis, on the average the hypertensive has more and larger atheromas than do his fellows with normal pressure. One group of people have precocious and severe atherosclerosis — those with familial hypercholesterolemia and multiple yellow tumors of the skin and tendons (familial xanthomatosis)[3]. These people may have angina, and may even die of coronary occlusion in their 'teens and twenties, and their arteries to an unusual degree show the same changes as do others many decades later—lipid in droplets, in crystals and in macrophages, edema, necrosis, granulation tissue vascularizing the plaques, hemorrhages and calcification.

Atheromatosis apparently begins with the accumulation of lipid from the plasma in intima showing no collagenous change. Some believe that high fat diets cause precocious arteriosclerosis in diabetic patients, and there is good statistical evidence that obesity predisposes to these lesions. The high incidence of the condition in the prosperous Americans and northern Europeans, with their high intake of eggs, dairy products and animal fat, is contrasted with the lower incidence in people with low cholesterol intake. But again it must be emphasized that in long-lived families, like that of William Welsh, obesity and a notorious fondness for ice-cream, eggs, butter and rich foods may not be followed by atherosclerotic disease, even in the ninth decade. These families are at the far end of the atheroma spectrum from those with xanthomatosis, doomed to coronary disease no matter how meager their diets. Most of us fall in the middle, and perhaps dig our graves with our forks and spoons. After all, there is more pleasure and less risk in one good meal than in a fast drive on the crowded highway.

The relation of tobacco to atheroma is not established clearly, but some people probably become sensitive to tobacco, and allergic states may also predispose to the disease. Alcohol seems to have no effect, save when it leads to obesity, and victims of alcoholic cirrhosis have aortas almost as faultless as those of the Chinese. Women, even when obese and hypertensive, have less arteriosclerosis than their brothers; but like eunuchs and eunuchoids, they are not immune.

The relationship between hypertension and atheromatosis is certainly most important and most clearly established. In the lower part of the abdominal aorta and the iliac arteries, as Hamilton[4] clearly demonstrated, the pulse pressure, the systolic pressure, and the steepness of the pulse wave are greater than anywhere in the body. Where this sharpest and hardest blow falls, the intima of the systemic bed shows the most advanced changes in all of us. Arteriosclerosis is far more severe in the legs than in the arms, and the arteries of the legs carry a high pressure, due to gravity, when we are on our feet.

2. Snapper, I.: Chinese Lessons to Western Medicine, New York, Interscience, 1941.
3. Bloom, D., Kaufman, S. R. and Stevens, R. A.: Hereditary Xanthomatosis, Arch. Dermat. & Syph. 45:1-18 (Jan.) 1942.
4. Hamilton, W. F. and Dow, P.: Experimental Study of Standing Waves in Pulse Propagated Through the Aorta, Am. J. Physiol. 125:48-59 (Jan.) 1939.

Atheromas, usually rare in the pulmonary artery, are found there very often in mitral disease, in asthma, in pulmonary fibrosis and in emphysema. The hypertension in the pulmonic bed varies widely in its cause, but its result seems to be the same. It is, of course, true that syphilis in the media, or any other inflammation in or near the wall of an artery may lead to intimal thickening and atheroma; but in many cases of pulmonary arteriosclerosis there is either no inflammation in the lung, or none near the main pulmonary artery, which yet shows striking plaques. The relation between pulmonary arterial hypertension (with right ventricular hypertrophy) and pulmonary atheroma is perfectly obvious, and in many cases there is no conceivable way in which the pulmonary disease could have affected the wall of the artery except by raising pulmonary arterial pressure.

Although some pathologists have made curious difficulties for themselves in trying to relate atherosclerosis and hypertension, to the alert practicing physician the time relationship has long been evident. Hypertensive patients recognized early, as in insurance examinations, have far less retinal arteriosclerosis than those with hypertensive disease in its final stages. Often one can follow the progress of the disease in the retina, seeing how lesions absent for months or decades appear and progress more or less rapidly as hypertension goes from its asymptomatic to its advanced or malignant phase. Since hypertension always precedes retinal arteriosclerosis, it seems obvious that its relationship is causal, and not merely a chance combination of two conditions to which the individual is predisposed. As we shall see later, the lesions of retinal and of small renal arteries are simply miniature atheromas.

The renal biopsies performed by Castleman and Smithwick[5] have confirmed the observations made at autopsies over many decades concerning the close parallelism between the changes in small arteries in the retina and those in the kidney. Since, in groups of patients with equally severe retinal changes or equal freedom from change in spite of hypertension, the renal arteries show comparable degrees of alteration, it seems obvious that the renal arterial changes, like those in the retina, follow hypertension and progress more or less rapidly. This conclusion is confirmed by studies of renal blood flow, using the diodrast method. The Chesleys[6], Lester White[7], and Smithwick's collaborators[5] all found normal renal blood flow in many well established cases of hypertension. Fall in renal blood flow again parallels retinal arterial damage in groups of cases of varying severity. Masters[8] observed that clinical evidence of myocardial infarction was four or five times more frequent in the hypertensive part of the population, at any age, than in the normotensive. This might be due to fortuitous predisposition to two unrelated conditions, but other evidence such as localization of the atheromas in the parts of the vascular bed receiving the heaviest pulse beats and highest pressure, and evidence gathered from study of pulmonary atheromatosis and from all the observations on progress of retinal and renal arteriosclerosis force me to believe that hypertension aggravates or initiates atherosclerosis in a very high proportion of people. Those with unusually fine vascular beds may show little vascular change after years or decades of hypertension. Others, with highly susceptible vessels, show rapidly progressing atheromas in many parts of the vascular bed, and it is chiefly because of the atheromas that hypertensive patients suffer and die.

This is not the place to examine the causes of hypertension, but it is necessary to emphasize that organic renal disease or organic change in renal arteries is the cause of hypertension in only a small proportion of cases. If we exclude cases of chronic nephritis, chronic pyelonephritis and chronic hydronephrosis, it is found that the renal arterial bed is normal in about 10 per cent of hypertensives who die or who are sick enough to submit to sympathectomy; that about 20 per cent show minimal, 20 per cent mild, 35 per cent moderately advanced, and 15 per cent severe lesions of the renal arterioles[5,9]. Naturally, there is no reason to believe that if biopsies were done when hy-

5. Castleman, B. and Smithwick, R. H.: The Relation of Vascular Disease to the Hypertensive State, J. A. M. A. 121:1256-1261 (April) 1943.

6. Chesley, L. C. and Chesley, E. R.: Renal Blood Flow in Women With Hypertension and Renal Impairment, J. Clin. Invest. 19:475-482 (May) 1940.

7. Findley, T., Edwards, J. C., Clinton, E. and White, H. L.: Clearance of Diodrast, Phenolsulfonphthalein and Inulin in Hypertension and in Nephritis, Arch. Int. Med. 70: 935-947 (Dec.) 1942.

8. Masters, A. M., Dack, S. and Jaffe, H. L.: Age, Sex and Hypertension in Myocardial Infarction Due to Coronary Occlusion, Arch. Int. Med. 64:767-786 (Oct.) 1939.

9. Kimmelstiel, P.: Benigne Nephrosclerose und arterieller Hochdruck, Virchows Arch. f. path. Anat. 290:245-269, 1933.

pertension was first demonstrable and the retinal vessel still normal, anything but normal or minimally altered arterioles would be seen. The material in the arteriolar walls encroaches very little on the lumen; the so-called hyalin actually is a fluid rich in lipoid and protein, forming blisters here and there in the intima. At least 80 per cent of patients who died of hypertension have renal beds more easily perfusible than those of many elderly normotensive people with sclerosis chiefly in renal arteries larger than the arterioles[10]. But even though renal arteriolar change can not be considered an important factor in initiating hypertension, it is certain that renal hypertension must supervene when the vascular bed in the kidney is severely damaged by hypertension of other types. This may explain the malignant or rapidly progressive phase seen in the cases with most marked renal arteriolar disease.

While some pathologists speak of arteriolar sclerosis as though it were a specific process, distinct from atheromatosis, and emphasize the "hyalin" rather than the lipoid, which is invariably emulsified in the intimal blisters, the arteriolar lesions appear to be identical with atheromas, save for the difference in the size of the vessel involved. Such lesions, except in the splenic arterioles, are rare save in hypertensive patients, and even in them are scarcely ever seen in the heart, the voluntary muscles, or the skin. They are most numerous in renal, retinal and adrenal arterioles and are common in the pancreas of the hypertensive patient. One can trace all the variations from large atheromas to arteriolar hyaline thickening as one proceeds out from the aorta through the renal artery and its arcuate and interlobular branches to the afferent arteries of the glomeruli. In hypertensive diabetic individuals the lipoidal exudate is found even in the intraglomerular branches of the afferent arteriole. Nowhere, as one proceeds toward the capillary bed, is any abrupt change in the character of the focal intimal lesions apparent, and in no case of arteriolar thickening of the intima are atheromas absent or rare in the larger arteries. All we can say is that the processes which lead to atheromas in the aorta or the coronaries rarely affect the arterioles in the absence of hypertension, but in the latter condition miniature atheromas cause arteriolar sclerosis in most cases and in many tissues, the kidney and retina above all.

Atheromas, or intimal fatty streaks identical with them, occur even in infants and children, especially in the abdominal aorta. Although age gives them a chance to grow and to show organization and degeneration, it probably is not correct to regard them as inevitable results of involution. We know that people with proper lipid metabolism and normal blood pressure can reach advanced age without an atheroma, and that young people or rabbits, if they have high blood cholesterol, develop atheromas before any other involutional change is demonstrable in the body. It therefore seems probable that one can learn how to prevent such lesions or even to cause their retrogression. Since this form of arteriosclerosis is now a leading cause of death, and one to which nearly one-third of American physicians' deaths now are ascribed, it is encouraging to know that it is not a pure involutional disease, as unavoidable as the "sere and yellow leaf," but a disorder subject to analysis and finally to control[11].

10. Cox, A. J., Jr., and Dock, W.: Capacity of Renal Vascular Bed in Hypertension, J. Exper. Med. 74:157-175 (Sept.) 1941.

11. Hirsch, E. F. and Weinhouse, S.: The Role of the Lipids in Atherosclerosis, Physiol. Rev. 23:185-202 (July) 1943.

RECENT ADVANCES IN THE TREATMENT OF HYPERTENSION

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The treatment of hypertension may be divided into three parts: the treatment of the complications, the treatment of the high blood pressure *per se*, and the treatment of the etiological factors.

The chief complications of hypertension are uremia, heart failure and cerebral vascular accidents. While some progress has been made in the therapy of all these conditions during the last decade, it is beyond the scope of this paper to discuss their treatment.

Among the measures which may help reduce blood pressure are rest, sedation, reduc-

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tion of weight and the judicious use of blood letting. These will be discussed in greater detail later. The cyanates have not proven to be very effective in lowering blood pressure. There seems to be little justification for the various "nerve cutting" operations, for they help only a very small percentage of patients and it is not possible to select these in advance of operation. Ever since Harrison, Grollman and Williams first reported finding a substance in the kidney that would lower the blood pressure of hypertensive rats, a great deal of work has been done in an attempt to isolate this substance from the kidney and to secure it in large enough quantities to treat hypertension in human patients. Until this has been accomplished no decision can be reached as to the clinical value of this approach to the treatment of hypertension.

Hypertension is a symptom, not a disease, and it may be caused by many different mechanisms. Experimentally, hypertension may be produced in animals by various procedures which injure the kidney or interfere with its blood supply; by alteration of spinal fluid dynamics (for example, injection of kaolin into the cisterna magna); by severing the carotid sinus and aortic depressor nerves; by injecting various hormones in large quantities; and by alterations in diet. We can find counterparts of most of these mechanisms in patients with hypertension. Since some of the conditions which cause hypertension may be treated with fair success, it is important to attempt to determine the etiological factor in the individual patient and to correct it, if this is possible. Table 1 is a general outline of the classification we use at the present time.

The percentage of patients with hypertension that can be classified under one of these groups depends upon the criteria one employs. If rather loose criteria are used, about 80 per cent of patients with hypertension can be classified under one or a combination of the above groups; while if more rigid criteria are employed, less than 50 per cent can be so classified.

The first large group is composed of patients whose hypertension is in the main initiated by neurogenic factors. As a subgroup under this we have classified those who have psychogenic hypertension. Psychogenic factors are an important cause of hypertension. Whether they are to be regarded as primary (underlying) causes or as secondary (aggravating) causes is a difficult question to answer, but in any case it is true that a large percentage of hypertensive patients have various psychic disturbances, the relief of which results in a lowering of the blood pressure. We have subdivided this group into those persons who have internal conflicts (the psychoneurotic group) and those who are affected by external factors (the stress and strain group). The psychoneurotic hypertensive is usually an individual

Table 1.
Classification of Hypertension

I. Systolic Hypertension Only (Aortic Insufficiency, Heart Block, Atheroma of Aortic Arch, Thyrotoxicosis, etc.)
II. True Hypertension: Systolic and Diastolic
  A. Neurogenic
    1. Psychogenic
      a. Psychoneurotic
      b. "Stress and Strain"
    2. Medullary
      a. Diphtheria
      b. Poliomyelitis
      c. Encephalitis
    3. Increased Intracranial Pressure
    4. Reflex
      a. Carotid Sinus
      b. Aortic Depressor Nerves
      c. Ischemic Muscle
        (1) Cardiac
        (2) Skeletal
  B. Endocrine
    1. Pituitary (Basophilic Hyperplasia—Cushing's Syndrome)
    2. Adrenal
      a. Medullary—Adrenalin (Paraganglioma)
      b. Cortical Tumors
    3. Ovarian
      a. Menopause
      b. Arrhenoblastoma
  C. Renal
    1. Acute and Chronic Glomerular Nephritis
    2. Obstruction to Urine Flow
      a. Congenital Anomalies
      b. Ureteral Stricture
      c. Urethral Obstruction
      d. Pelvic Tumors
      e. "Spinal" Bladder
      f. Renal Calculi
    3. Urinary Tract Infection
      a. Pyelitis
      b. Pyelonephritis (Classical or Masked)
    4. Disease of Renal Arteries
      a. Renal Atheroma (Large and Small Arteries)
      b. Arteriolar Sclerosis
      c. Infarcts of Kidney
    5. Tumors of Kidney
      a. Wilms Tumor
      b. Other Tumors
    6. Coarctation of Aorta
  D. Metabolic
    1. Obesity
    2. Hypercholesteremia
  E. Miscellaneous
    1. Congestive Heart Failure
    2. Mixed
    3. Unclassified

with a labile blood pressure that is markedly influenced by emotional rest, sedation, and anesthesia, except in its terminal stages. He usually has tachycardia, and his pulse pressure is usually great in relation to his systolic blood pressure. The "stress and strain" group is typified by the business man who works under severe tension without getting adequate rest, physical exercise or vacations away from his work. These individuals often have increases in their blood pressures coinciding with the periods of stress in their daily living. It is important to recognize these two groups of hypertensives; for they are the people in whom physical activity is beneficial and should be encouraged, and in whom mental and emotional activity should be curtailed as much as possible, both with sedatives and with ordinary psychotherapy. They should be encouraged to find physical outlets for their energy.

There are a small group of patients who have hypertension due to disorders involving the brain stem, such as diphtheritic paralysis, poliomyelitis and encephalitis. The accompanying bulbar paralysis makes the recognition of this condition easy. It is important to remember that a brain tumor causing increasing intracranial pressure may also cause a rise in blood pressure. The differential diagnosis between brain tumors and hypertensive encephalopathy may at times be difficult, but can usually be arrived at if one carefully evaluates all of the factors present.

The reflex causes of hypertension are probably not of significant clinical importance, except for the reflex mechanism that causes increase in blood pressure from ischemic muscle. This probably is the mechanism responsible for the rise in blood pressure with angina pectoris, though one cannot be certain of this.

There is reason to believe that the pituitary, the adrenals and the ovaries may each be responsible for hypertension at times. If one uses a loose classification of Cushing's syndrome—that is, trunk obesity, striae, mild polycythemia and perhaps back pain or mild hyperglycemia—many patients will fall into this group.

Paraganglioma of the adrenal glands is a rare tumor that causes paroxysmal hypertension. It is characterized by sudden rises in the blood pressure, tachycardia, and often angina pectoris. The diagnosis is important because surgical removal of the tumor effects a cure. The diagnosis can sometimes be established by demonstration of the tumor with perirenal air injection, by the finding of increased amounts of adrenalin in the circulating blood, or by the discovery of constriction in the larger blood vessels. For example, in the ordinary hypertensive patient there is a pressure gradient of about 30 mm. of mercury between the brachial and the digital arteries. In the individual with paraganglioma of the adrenal gland this difference in pressure may be as high as 100 mm. of mercury. Since measurement of digital pressure is a fairly simple procedure, it should be more widely used.

Adrenal cortical tumors and arrhenoblastoma of the ovaries are masculinizing tumors, both of which may cause hypertension and both of which should be suspected when one notes changes in sexual development in a young hirsute hypertensive female.

What role the menopause plays in the production of hypertension is as yet uncertain. In the group of women who have many symptoms of the menopause, with "hot flashes" and nervousness, and who also have high blood pressure, there are some who are helped by substitution therapy. However, there is no evidence that any ovarian extract will lower the blood pressure in a hypertensive woman, except as it improves the psychic disturbances, and there is little justification for using substitution therapy if sedation will adequately control the symptoms.

The third large group of etiological factors in hypertension consists of various disorders of the kidneys and urinary tract. It is important to make an accurate diagnosis of the renal disorder present, for some of the conditions are amenable to therapy. Although these patients as a rule do not respond well to rest, sedation, vacations or psychotherapy, one should nevertheless give these means of therapy a trial. It is my belief that, unless the cause is definitely known, every patient under 35 years of age who has hypertension should be given a cystoscopic examination to rule out a correctable urinary tract disorder. Obstruction anywhere in the urinary system may result in hypertension. Pyelitis and pyelonephritis are common causes of increase in blood pressure. As a group such patients usually have moderately elevated blood pres-

sure with relatively high diastolic pressure. They may or may not complain of urinary symptoms. They often complain of some discomfort in the region of their kidneys. They usually have infection and at times have low-grade fever and an elevated leukocyte count. Kidney stones are often present in people with hypertension. Sometimes they should be removed, for their presence can cause further kidney damage and thus make the hypertension worse.

A common cause of hypertension in elderly individuals is arteriosclerosis of the renal artery. This commonly occurs at the point where the renal arteries leave the aorta, producing a situation similar to the application of a Goldblatt clamp. These people often have hypercholesteremia and have large pulse pressures due to inelasticity of the aorta. If hypercholesteremia causes hypertension it is probably through the production of renal arteriosclerosis.

Arteriolar sclerosis is usually caused by hypertension. Its development leads to renal ischemia, which may produce greater hypertension. Infarcts of the kidney are rare causes of hypertension, but their recognition is important, since nephrectomy has been reported as curing such cases.

Of the various tumors of the kidney the Wilms tumor, usually seen in children, is the most important one in the genesis of hypertension. Cure may sometimes be achieved by surgical removal of the tumor.

Coarctation of the aorta probably causes hypertension by the production of renal eschemia (the Goldblatt mechanism). Coarctation should be suspected in all young hypertensive patients, and its presence may be proved by the finding of an elevated blood pressure in the arms, with a normal blood pressure in the legs, as well as by roentgenograms showing the typical scalloping of the ribs.

The role of metabolic factors in the production of hypertension is uncertain. We do know that there are large numbers of patients who have marked obesity and hypertension, and in whom the blood pressure declines with loss of weight. It is probably wise to advise all hypertensive individuals to keep their weight at or below normal.

In the miscellaneous group we include those individuals who display a moderate rise in blood pressure at the time they develop congestive heart failure. These cases are of interest in that the blood pressure returns to normal when the heart failure improves. In a few people hypertension may be produced by more than one cause, and it may not be possible to decide which is the dominant factor. These then remain a vague group which we are still unable to classify. This group may be large or small, depending on the rigidity of one's criteria for classification. As our knowledge increases these cases should become fewer.

Conclusion

The various factors that may be responsible for increasing the blood pressure have been outlined and discussed. Intelligent treatment requires some knowledge of the etiological elements in the individual patient. A few patients can be cured, and many can be greatly helped if one approaches their problems in this manner.

HYPERTENSION DUE TO UNILATERAL RENAL DISEASE

Report of a Case

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BURLINGTON

Much has been written in the past few years regarding hypertension caused by unilateral renal disease. I have seen many cases of hypertension due to renal disease, but it is usually impossible to tell which kidney is the one more responsible for the condition. It would be poor judgment to remove one kidney when the other is not functioning completely. It is claimed that half of a normal kidney can take care of the elimination under average conditions, but a patient who has only one poorly functioning kidney is out of luck when he has an acute infection or when some other crisis overtakes him.

I hesitate to advise a patient to have a nephrectomy if there is any function of the kidney. When a patient has had a nephrectomy and the other kidney becomes badly diseased, there is sometimes very litte that we can do for him.

I shall not discuss the causes of hypertension but will refer you to an article by Dr. Keith S. Grimson in *Surgery, Gynecology & Obstetrics* for November, 1942[1].

From the Alamance General Hospital, Burlington, N. C. Submitted for publication April 1, 1943.

1. Grimson, K. S.: Surgical Treatment of Hypertension, Collective Review, Internat. Abstr. Surg. 75:421-434, 1942; in Surg., Gynec. & Obst., Nov., 1942.

Case Report

G. C. W. was first admitted to the Alamance General Hospital on October 27, 1937, suffering with left renal colic. At that time his blood pressure was 140 systolic, 100 diastolic. A small renal calculus was removed from the left ureter and a diagnosis of stricture of the lower left ureter was also made. He was advised to return for dilatation of the ureter, but failed to do so. In March of 1939 he was admitted to another hospital with severe pyelitis in a very toxic condition. At that time his blood pressure was 134 systolic, 86 diastolic. Since 1939 he has had occasional aching pains in the left loin, but no severe attacks of renal colic. During the spring of 1942 his family physician took his blood pressure and told him that it was up about 10 points, but did not tell him what it was.

In the early part of September, 1942, the patient volunteered for service in the army, but was turned down because of hypertension. He was told that his blood pressure was 180. He was admitted to this hospital on September 22, 1942, with a blood pressure of 180 systolic, 130 diastolic. He was a very robust individual, and except for his blood pressure his general condition was excellent. His past and family history had no bearing on his present condition.

Cystoscopic examination showed the trigone to be inflamed. Indigo carmine appeared on the right side in three minutes with good concentration, but none appeared on the left side in thirty minutes. We were able to pass a catheter only 5 cm. up the left ureter. A pyelogram showed the left pelvis and upper ureter dilated, with clubbing of the calices and strictures in the mid and lower ureter. The right kidney was well outlined but the left was poorly outlined. An intravenous pyelogram showed good function on the right side.

Laboratory findings: Examination of the blood showed 9700 white blood cells, a hemoglobin of 90 per cent, and 4,620,000 red blood cells. Urinalysis of a voided specimen showed the urine clear, with an acid reaction and a specific gravity of 1.012. There was no albumin or sugar. Microscopic examination showed 5 to 6 white blood cells and an occasional red blood cell. A culture was negative.

Diagnosis: Non-functioning left kidney due to stricture of the ureter.

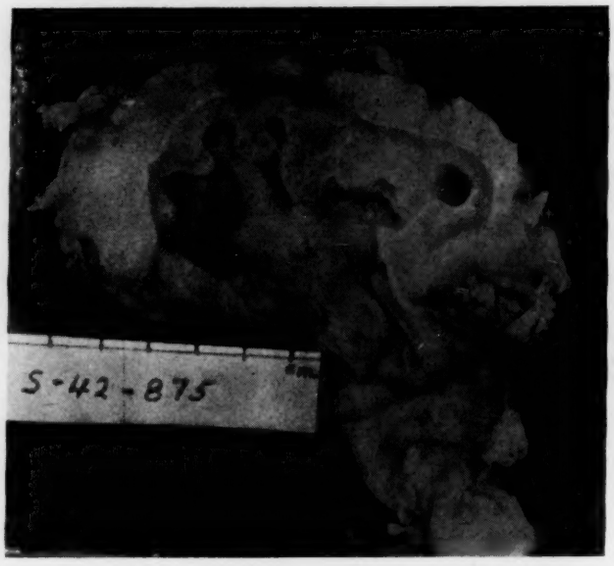

Fig. 1

Since the patient's blood pressure had recently become elevated, I believed that the left kidney was responsible, and advised a nephrectomy. This was done on September 26, 1942. The kidney was imbedded in a mass of fat, which was adherent to the kidney. The entire kidney, with much of the fat, was resected. The patient had an uneventful convalescence.

The fibrotic changes in the kidney are shown in figure 1.

The following is the report of the pathologist, Dr. J. B. Bullitt of the University of North Carolina School of Medicine:

"Gross Description: The kidney measures 75 by 40 by 25 mm., and is surrounded by a thin layer of fat, varying from 6 to 20 mm. in thickness. The capsule strips with some difficulty, leaving a roughened, granular surface which shows numerous minute areas of brown, apparently hemorrhage. There is marked atrophy of the kidney substance. The cortex and medulla are not clearly defined, but together measure 5 mm. The pelvis and calices are markedly dilated. The pelvic wall is thickened and slightly roughened. Eighty millimeters of ureter remain attached. This is markedly dilated and measures 40 mm. in circumference. The mucosa of the ureter also shows multiple minute areas of hemorrhage.

"*Microscopic Description:* There is marked atrophy of the kidney parenchyma with replacement by fibrous tissue. There are very few tubules remaining. The glomeruli appear very close together. Many of them appear only as small hyaline balls. The remainder are in various stages of degenera-

tion. Throughout there is a rather marked infiltration of the stroma, with lymphocytes and a few plasma cells. A section through the pelvis shows a moderate fibrous thickening, throughout which there is an extensive infiltration with lymphocytes and plasma cells. The epithelium is flattened and only one to two cells thick. Section of the ureter shows some fibrosis of the wall. The epithelium is of a transitional type and varies from two to eight cells in thickness."

The patient returned on the following dates to have his blood pressure checked:

Date	Blood Pressure
February 19, 1943	140/100
March 5, 1943	140/100
July 15, 1943	126/80
September 27, 1943	140/100

From the data listed above, it would seem that his blood pressure has become stabilized at the 140/100 level. Since a year has elapsed following his operation, I think the assertion is justified that the hypertension was due to the sclerotic kidney.

Discussion

It should be borne in mind that a ureter can be ligated and cut without causing renal colic. The kidney will atrophy without pain. On the other hand, if a small, irregularly shaped calculus starts down the ureter, waves of peristalsis in the ureter cause the agonizing pains of renal colic. After the ureters have been partially obstructed for some time and the ureter and pelvis have dilated to a certain degree, the patient no longer has the severe pains of renal colic, but a dull, heavy feeling in the loin or costovertebral angle. I recall one patient whose chief symptom was periodic enlargement of the abdomen. She would have to allow 4 inches in dress to take care of the expansion and contraction. Upon examination I found that she had a massive intermittent hydronephrosis due to a severe kink in the ureter. Any individual who has a dull ache or heavy feeling in the loin should have a complete urological check-up. Frequently a calculus lodged in a calix may cause a dull ache in the loin, and sometimes gastro-intestinal disturbances, with gas, belching and other misleading symptoms which are suggestive of appendicitis, gallbladder or stomach disorders. Consequently a fair percentage of these patients have been operated on for gallbladder or other abdominal diseases.

I recall another patient who denied having any attack of renal colic or any symptoms of kidney trouble. When he came in his only complaint was anuria for thirty-six hours. Upon examination I found one kidney completely dead and the other with severe hydronephrosis and a small calculus blocking the ureter. The calculus was pushed back into the pelvis, and the kidney began to function. The patient has been at work without symptoms for the past three or four years.

Conclusion

In all cases of hypertension it is advisable to have a urological check-up, particularly if there is any history of renal disease in the past. Always bear in mind that some of these kidneys may become ischemic from obstruction to the circulation, and never cause any of the classical symptoms of renal colic or any symptoms referable to the kidney.

A COMBINED ISOMETRIC AND STEREOSCOPIC TECHNIQUE FOR RADIOGRAPHIC EXAMINATION OF THE OBSTETRICAL PATIENT

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Roentgenography of the pregnant woman provides an excellent opportunity for diagnosis with the visual sense. Heretofore, the time-honored method has been a well developed sense of touch in the examining finger. The x-ray has improved the accuracy of obstetrical diagnosis and prognosis, when the films are properly exposed and interpreted.

Many radiographic techniques have been developed, including the comparative, frame, triangulation, grid, isometric scale, stereoroentgenometric, and stereoscopic procedures. The various methods have been discussed by Ball[1], Caldwell and Moloy[2], Clif-

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ford[3], Granzow[4], Hodges and Dippel[5], Johnson[6], Moloy[7], Moore[8], Reuter and Reeves[9], Rowden[10], Snow[11], Steele and Javert[12], Thoms[13], Walton[14], Weitzner[15], and others. Each technique has its advantages, and also has important disadvantages and limitations which help to account for the numerous methods in use and their frequent alteration.

Our experience with Javert's modification[12a] of Granzow's isometric scale technique for the lateral film[4] has led us to the development of a distorted scale technique for the frontal film. This has been added to the stereoscopic technique of Moloy[7], thereby obtaining a *combined* method which is complete and comprehensive. It provides for an adequate survey of the obstetrical patient when the films are taken at term or early in labor. It offers the following advantages:

1. *Mensuration* of the anteroposterior, sagittal, transverse and vertical diameters can be performed with both the isometric scales and the stereoscope.
2. *Pelvic classification* can be accomplished, using for criteria size, mensuration and morphology. The *morphology* of the obstetric pelvis can be ascertained by direct vision in the stereoscope. Models of the anterior and posterior segments of the inlet, as well as linear diameters, assist in diagnosis. *Pelvic architecture* can be evaluated at the brim, midpelvis and outlet visually and by means of isometric scales.
3. *The mechanism of labor* can be studied visually in the stereoscope. This is invaluable for teaching purposes. The *position of the fetus* at the brim, midpelvis and outlet, Litzmann's and Naegele's obliquity, and lever actions can be observed.
4. *The cephalo-pelvic size relationship* can be studied by visual perception and by means of pelvimetry and cephalometry.
5. *Diagnosis and prognosis* are made with greater accuracy after correlation of the above data.

Technique of Making Films

The *combined* technique features identical positioning of the patient for the lateral and frontal films. This facilitates the joint work-up of the films for isometric scale pelvimetry. Determination of uncertain external anatomical landmarks, and measurements on the patient are not necessary.

For the frontal films the patient lies on the x-ray table in the position shown in fig. 1, the shoulders resting on two pillows placed lengthwise. A rolled sheet, about 4 inches in diameter, is placed under the lumbosacral curvature so as to tilt the pelvis forward in order to obtain a more direct view of the inlet. A wooden rod bearing two lead markers situated 9 cm. apart is placed under the patient. These appear on the stereoscopic films and are of value in setting the precision stereoscope for mensuration. They are not necessary when an ordinary stereoscope is employed. The x-ray tube is centered over the patient on a line between the anterior superior spines, and 25 inches from the x-ray film. A Bucky diaphragm is used. The tube is shifted 1¼ inches cephalad and the film is exposed for three to ten seconds, using 80 kilovolts and 40 milliamperes. The tube is then moved caudad for a distance of 2½ inches and the second frontal film is similarly exposed.

For the lateral film the patient lies in the same position, but is moved to a dumbbell-

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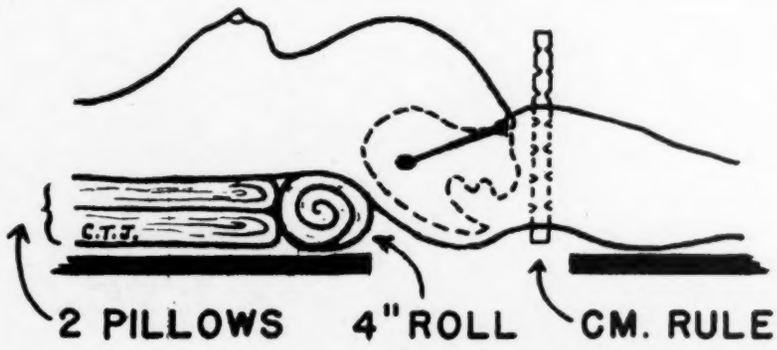

Fig. 1.

Position of patient for lateral and frontal films.

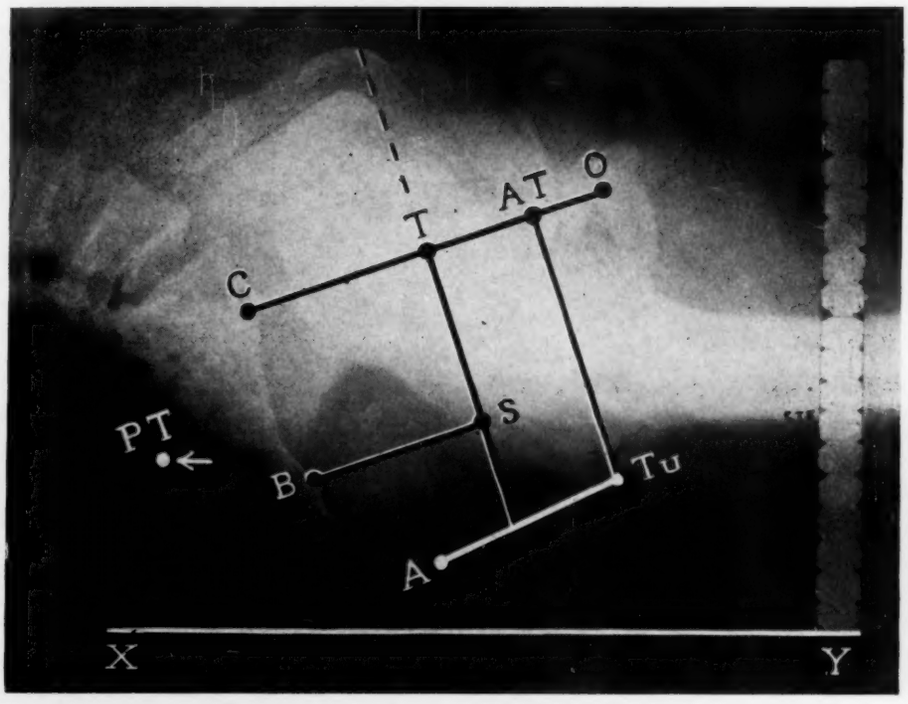

Fig. 2.

Lateral film. Antero-posterior, sagittal and vertical diameters are measured.

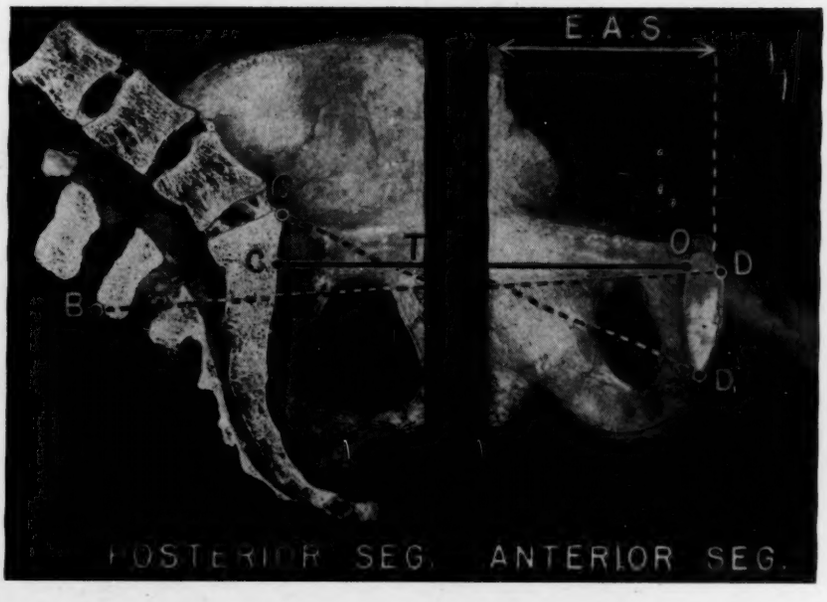

Fig. 3.

Sagittal section of pelvis, showing anterior and posterior segments.

shaped board of plywood supported on an ordinary stretcher. The hips are placed over the narrow portion of the board with a lead sheet beneath the buttocks in order to minimize secondary radiation. A notched metal centimeter scale is placed in front of the symphysis pubis in a vertical position. The x-ray table is now turned vertically and the patient is placed in front of it (or a portable Bucky diaphragm can be employed). One hip touches the table and the position is maintained with a fabric belt. The x-ray tube is centered on a line drawn between the trochanters and the posterior superior spine and situated 36 inches from the film. The exposure varies from twelve to twenty seconds, depending on the size of the patient, and 80 kilovolts and 40 milliamperes are used.

Analysis of the Lateral and Frontal Films

Mensuration

The lateral film, placed in a view box, is studied first. A baseline, X-Y, is drawn perpendicularly to the tip of the centimeter scale, as shown in figure 2. It corresponds to the top of the x-ray table. Certain other lines are drawn on the film, using a red wax crayon. Line C-O is the obstetrical conjugate drawn in the plane of the iliopectineal lines. T-S is drawn perpendicularly to C-O through the bases of the ischial spines. It serves to divide the pelvis into anterior and posterior segments, as shown in figures 3 and 4. Line C-T is the posterior sagittal diameter of the inlet, and T-O is the anterior sagittal diameter. B-S is drawn parallel to C-O and constitutes the posterior sagittal diameter of the midpelvis. A-Tu is the posterior sagittal diameter of the outlet, and can also be measured clinically.

Calipers are employed for the measurement of the anteroposterior diameters, using the centimeter scales on the film. Points T, AT, PT, S and Tu correspond to the horizontal planes of their respective transverse diameters—namely, the transverse, anterior transverse, posterior transverse, interspinous and intertuberous diameters, as indicated in figure 5. The vertical heights of the planes of these diameters from the x-ray table can be determined by measuring the distance from the baseline X-Y to these points. These distances are then recorded so as to be readily available when the transverse diameters are measured on the frontal film with the distorted centimeter scales shown in figure 6. These scales were made by exposing a metal ruler at levels from 0 to 16 cm. above the x-ray table at a target-film distance of 25 inches. The films bearing the scales were mounted in an ordinary picture frame.

The frontal film is now placed before a view box, and line T_1-T_2 is drawn with red

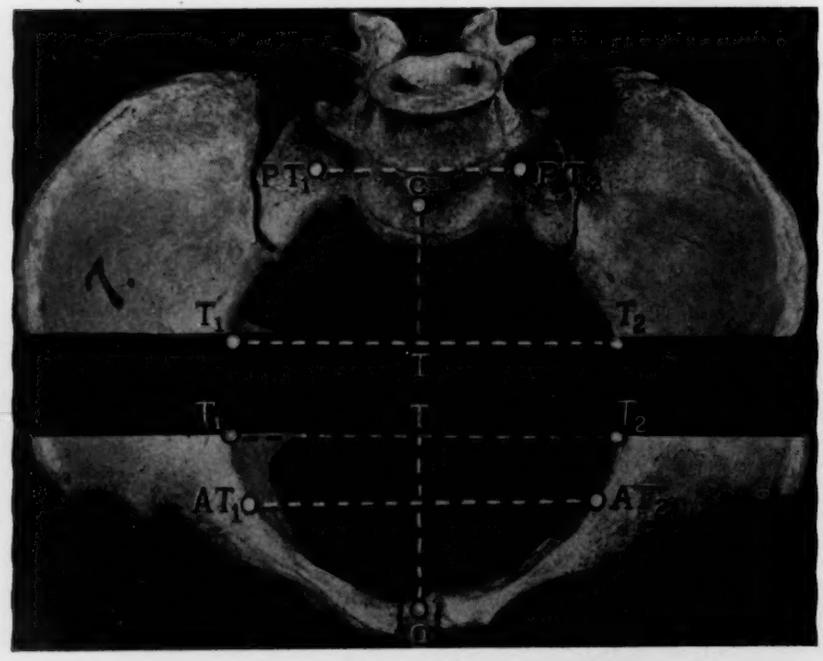

Fig. 4.

Frontal view of pelvis, showing anterior and posterior segments and the diameters of each.

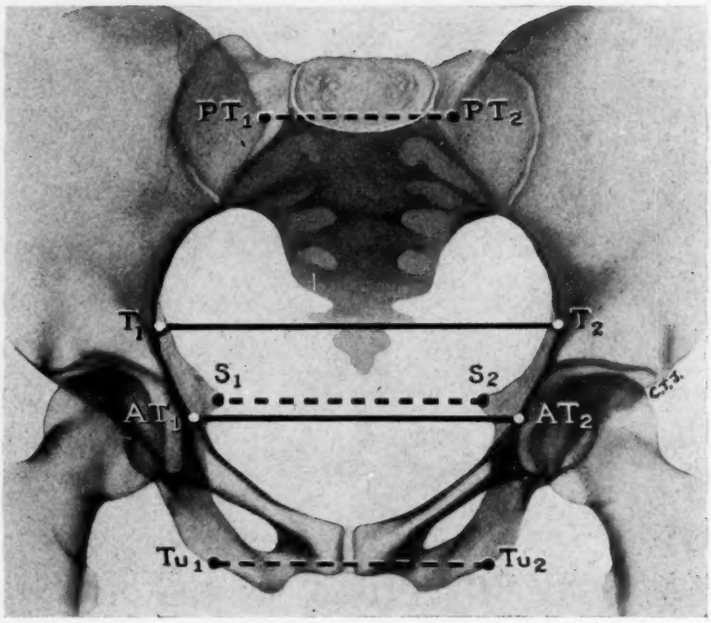

Fig. 5.

Frontal film. Transverse diameters only are measured on distorted scales shown in figure 6.

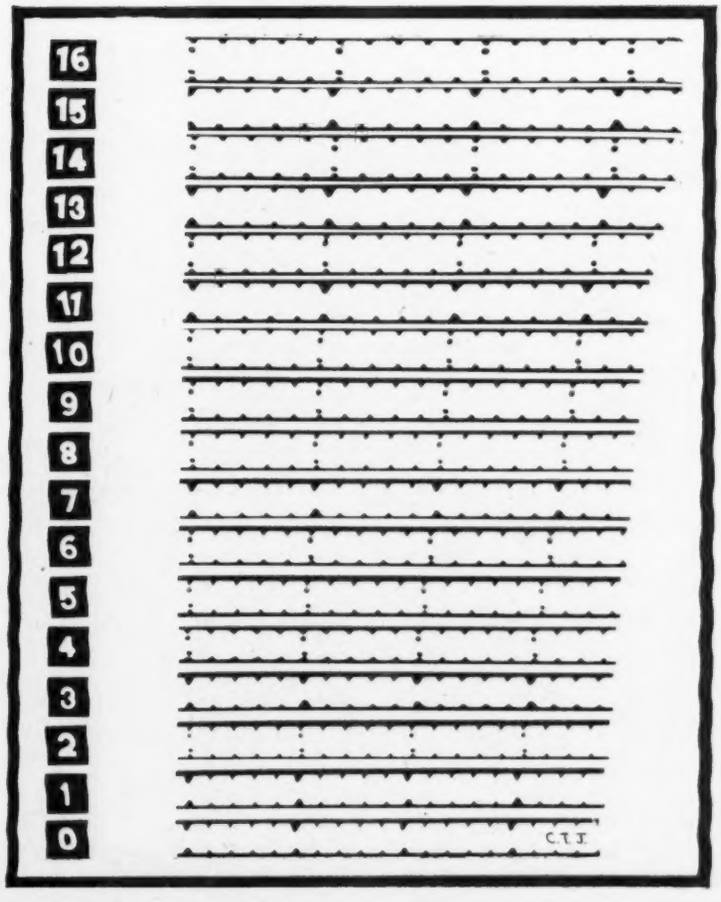

Fig. 6.

Distorted centimeter scales.

wax crayon at the widest portion of the inlet, as shown in figure 5. It constitutes the transverse diameter and lies in the coronal plane of the line T-S placed perpendicularly to C-O on the lateral film. The anterior transverse diameter (AT_1-AT_2) is drawn between the iliopectineal eminences situated at the thinnest portions of the acetabula. The posterior transverse diameter (PT_1-PT_2) is drawn between the tuberosities of the iliac bones. This diameter can be measured clinically between the inner margins of the dimples of the rhomboid of Michaelis. The interspinous (S_1-S_2) and intertuberous (Tu_1-Tu_2) diameters are also drawn. The length of each diameter corresponding to the vertical height of the horizontal plane of each respective transverse diameter is measured with the calipers on the distorted scale. The baseline X-Y assists in determining the vertical heights.

Funnel pelves can be detected by measuring the intertuberous diameter. All too often clinical measurements of this diameter are incorrect. By x-ray, this diameter measured from 10 to 12 cm. in 97.5 per cent of 400 patients (table 1). The incidence of funnel pelves in this series of patients was only 0.50 per cent. According to clinical measurements the incidence is very much higher; in 3.3 per cent of 27,951 patients, the intertuberous diameter measured 8 cm. or less.

Table 1.

Incidence of Various Measurements of the Intertuberous Diameter by X-Ray in 400 Cases

Measurements	*Number of Cases*	*Per cent*
12 cm. or over	147	36.75
11-11.9 cm.	198	49.50
10-10.9 cm.	45	11.25
9- 9.9 cm.	8	2.00
8- 8.9 cm. or less	2	0.50
	400	100.00

The frontal films are now placed in the precision stereoscope. The images of the lead markers are placed 9 cm. apart. The various transverse diameters drawn with red crayon produce images which assist in the location of these diameters in the stereoscope, thereby facilitating mensuration. The accuracy of these measurements depends on the experience of the observer. They are recorded for comparison with those obtained with the isometric scales, thereby providing a check on mensuration.

Classification of pelves

The morphology of the inlet is now studied in the precision stereoscope. The classification of Caldwell and Moloy is used. If the precision stereoscope is not available, morphology can be studied with an ordinary stereoscope. The transverse diameter readily divides the inlet into anterior and posterior segments. Cardboard models, drawn to scale from average measurements, are shown in figure 7. They are used to classify each seg-

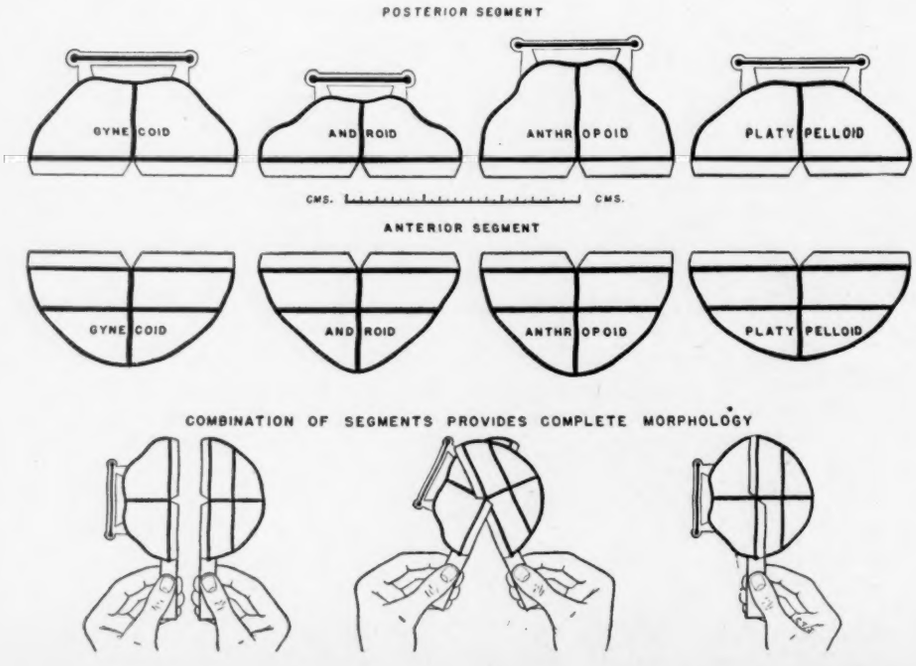

Fig. 7.

Cardboard models of anterior and posterior segments of inlet, used for diagnosis of morphology.

Fig. 8.

The stereoscope is employed for study of morphology, mensuration, *mechanism of labor* and cephalopelvic size relationship.

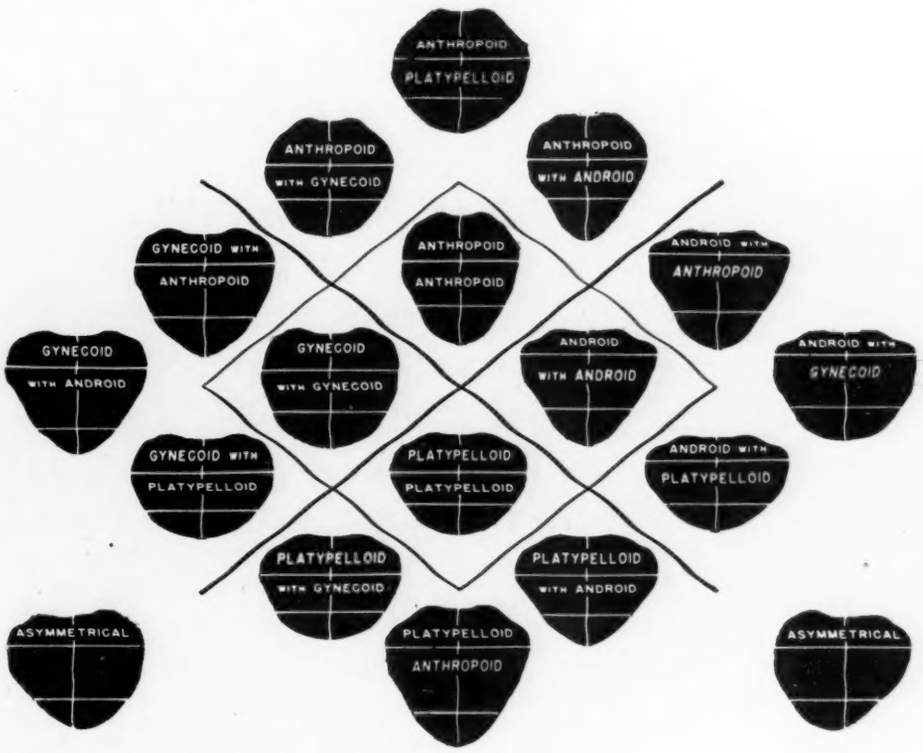

Fig. 9.

Eighteen pelvic types are *theoretically possible.* All have been observed.

	POSTERIOR SEGMENT				ANTERIOR SEGMENT			
	MORPHOLOGY	POSTERIOR TRANS.	POSTERIOR SAG.	TRANS.	MORPHOLOGY	ANTERIOR TRANS.	ANTERIOR SAG.	C. O.
GYNECOID	GYNECOID							
pure		7.5	5.0	13.2	GYNECOID	11.3	6.2	11.2
mixed		7.1	5.5	12.8		10.8	6.4	11.9
ANDROID	ANDROID							
pure		5.9	3.7	12.9	ANDROID	10.2	6.5	10.2
mixed		6.0	3.9	13.1		10.9	7.1	11.0
ANTHROPOID	ANTHROPOID							
pure		7.5	6.0	12.2	ANTHROPOID	10.2	6.6	12.6
mixed		7.2	6.1	12.4		10.9	6.2	12.3
PLATYPELLOID	PLATYPELLOID							
pure		8.2	4.8	14.3	PLATYPELLOID	12.4	5.8	10.6
mixed		8.0	4.7	14.0		11.9	6.1	10.8

Fig. 10.

Classification of pelves, using mensuration and morphology as criteria.

Table 2.

Incidence of Pelvic Types According to Anterior and Posterior Segments in 1,000 Cases

Pelvic morphology of inlet	*Anterior Segment*		*Posterior Segment*	
	Number	*Per cent*	*Number*	*Per cent*
Gynecoid	575	57.5	563	56.3
Android	138	13.8	196	19.6
Anthropoid	176	17.6	170	17.0
Platypelloid	111	11.1	71	7.1
Total	1,000	100.0	1,000	100.0

ment individually, as shown in figure 8. About half of the pelves we have studied have been pure types, and about half have been mixed. All combinations have been observed, including the asymmetrical forms, as indicated in figure 9. The incidence of the various pelvic types according to segments is given in table 2.

Pelvic architecture is also evaluated. The lateral bore and the character of the sacral curvature is observed in the lateral film. In the stereoscope, attention is directed to the sidewalls. With the data obtained thus far, the pelvis can be classified according to size, mensuration and morphology. The criteria for these classifications are provided in figure 10. These average measurements were used to construct the models shown in figure 7.

Mechanism of labor

The mechanism of labor is now observed. An ordinary ruler, placed in the plane of the occipitofrontal diameter, facilitates the diagnosis of position and obliquity. A range of 22.5 degrees on either side of the transverse, anteroposterior, and oblique diameters is used to determine position, as shown in figure 11. The transverse positions, L. O. T. and R. O. T., constitute 64 per cent of the total number of presentations at the brim and midpelvis. Litzmann's obliquity is present in about 75 per cent of the cases at the inlet; whereas in the midpelvis Naegele's obliquity is the most frequent, as is shown in table 3. The entire mechanism of labor can be interpreted visually. A description of the mechanism for the transverse position, based on physiologic evidence obtained *in vivo* by means of roentgenograms, has been recently published by Steele and Javert[2b]. It resembles closely the mechanism described by Pinard and Varnier[16], who based their views on pathologic evidence obtained from frozen sections of women dying in labor.

Table 3.

Incidence of Obliquities of the Fetal Head at the Inlet and Midpelvis in 682 Cases

Obliquity	*At Inlet*	*In Midpelvis*
Litzmann	75.2	14.8
Naegele	17.9	76.8
Neutral	6.8	8.3
	99.9	99.9

Cephalopelvic size relationship

Cephalopelvic size relationships can be observed by direct vision in the stereoscope. The fetal head can also be measured, except in cases of marked Litzmann's or Naegele's

16. Pinard, A., and Varnier, H.: Etudes d'anatomie obstetricale normale et pathologique, Paris, G. Steinheil, 1892.

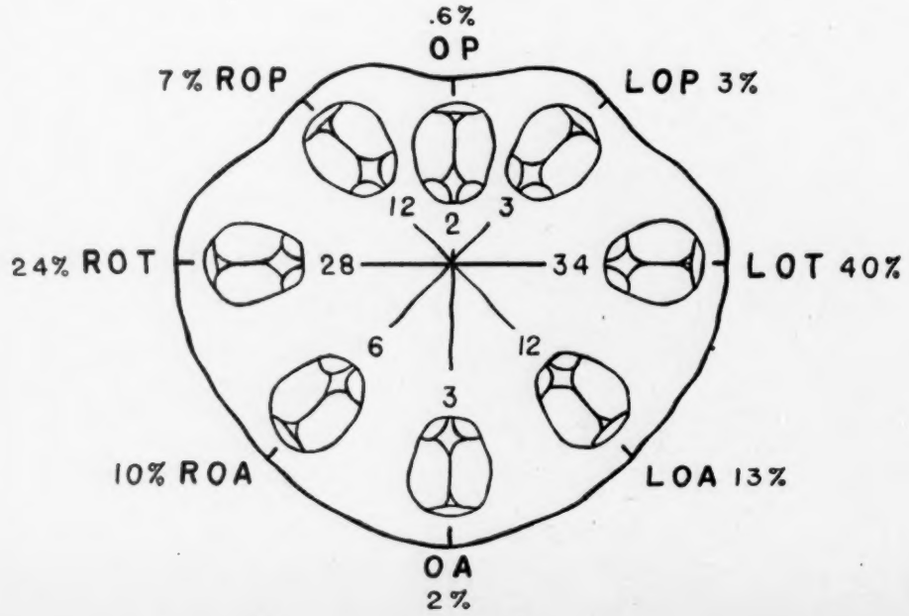

Fig. 11.

The incidence of positions at the brim from roentgenograms of 1,040 cases. (Figures within the diagram are incidences in the midpelvis.)

obliquity. The biparietal, occipitofrontal, and suboccipito-bregmatic diameters can also be measured. The linear relationship of these diameters to the pelvic measurements are evaluated. Circles of cardboard, measuring 9, 10 and 11 cm., can be placed in the image of the pelvic inlet and passed through the birth canal. They assist in determining size relationships.

Diagnosis and prognosis

Information obtained with the *combined* technique is a valuable adjunct to the clinical examination. The data are obtained as presented above and are recorded on a special x-ray report sheet. The results of mensuration of the various diameters with the isometric scales and with the stereoscope are noted, for ready comparison. Pelvic morphology and architecture are also described. The mechanism of labor is stated. After the diagnosis, a prognosis as to the type of delivery is attempted. The records are placed in the history and become an integral part of it. Duplicate copies are made for the research files.

Conclusions

A *combined* isometric and stereoscopic technique for the roentgenologic study of the obstetric patient has been presented. With this method the positioning of the patient is identical for the lateral and the frontal films. This facilitates the joint work-up of the films with regard to isometric mensuration of the brim, midpelvis and outlet. Measurements can also be made with the precision stereoscope, and serve as a check on those obtained by means of isometric scales.

Pelvic architecture at the brim, midpelvis, and outlet is evaluated. The combined technique also provides for the classification of pelves, using size, mensuration and morphology as criteria. Position, obliquity, and the mechanism of labor can be studied in the stereoscope. Cephalopelvic size relationships can be determined.

Visualization of the entire birth canal provides a "blue print" of the passage and passenger which is of material assistance in making difficult decisions, and especially if operative delivery is contemplated. Diagnosis and prognosis are made with greater accuracy as experience is acquired. X-ray has supplied the opportunity for use of the sense of vision in obstetrical diagnosis, which heretofore depended mainly upon the sense of touch in the examining finger.

TYPHOID FEVER IN CHILDREN

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and
FRANK LEDESMA-DIAZ, M.D.
DURHAM

Many observers have stressed the classic findings of typhoid fever in adults, which were so clearly described by Gerhard[1]. Still others[2] have called attention to the symptomatology of the disease in infants and young children. However, we believe that many cases of typhoid fever in this early age group are mis-diagnosed because the complaints are given by a second person, the symptoms are atypical, the course often short and, last but not least, the disease is not suspected because of its supposed rarity.

During the past decade we have observed 46 proven cases of typhoid fever in patients under 14 years of age (25 white and 14 Negro children) on the Pediatric Service at Duke Hospital; in several other cases typhoid was suspected but not proven. We believe that certain of the data on this series deserve emphasis.

The Age Incidence

Thirty of the 46 patients were 6 years of age or less, while 10 were under 2 years of age. The youngest was 3 months old. Three of the 46 children had been previously immunized with three injections of vaccine (twelve, fifteen, and twenty-one months before infection), and 3 others were given one or two injections of vaccine after exposure to a known case, probably during the incubation period. The age distribution illus-

From the Department of Pediatrics, Duke Hospital and Duke Medical School, Durham, North Carolina.
Read before the Section on Pediatrics, Medical Society of the State of North Carolina, Raleigh, May 12, 1943.

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(e) Alarcon, A. G.: La Fiebre Tifoidea en el Lactante, Rev. Mex. de pediat. 12:68-77 (Feb. 10) 1942.

Table 1.

Symptoms (Complaints) Before Admission
(46 Cases)

Fever	34	Weakness	4
Headache	15	Chills	4
Malaise	15	Bleeding mouth	1
Diarrhea	13	Edema of eyelids	1
Anorexia	13	Urinary frequency	1
Vomiting	12	Hematuria	1
Abdominal pain	10	Cough	2
Abdominal distention	2	Epistaxis	3
Constipation	5	Pain in chest	1
Drowsiness	10	Earache	1
Irrational state	9	Back pain	1
Irritability	5	Muscular aches	1
Stupor	4	Sore throat	1
Vertigo	1	Pain in neck	1
Delirium	1	Genital pain	1
Nausea	4	Pyuria	1
Rash			

Table 2.

Physical Signs on Admission
(46 Cases)

Fever	46	Gingivitis	1
Abdominal distention	29	Rales in chest	6
Abdominal tenderness	28	Ankle clonus	5
Spleen enlarged	10	Stiff neck	4
Liver palpable	10	Lumbar tenderness	2
Doughy abdomen	6	Kernig	2
Drowsiness	7	Romberg	1
Irritability	7	Ptosis of eyelid	1
Irrational state	7	Gen. spasticity	1
Stupor	7	Rash (Rose spots-2)	5
Acidosis	1	Hem. diathesis	4
Dehydration	5	Pain on knee motion	1
Tonsillitis-Pharyngitis	9	Catarrhal otitis media	2

trates the importance of routine typhoid immunization early in the second year of life. The majority of North Carolina children, if they receive vaccine at all, are not immunized until they have been in school for a year or more. Thirty of our 46 patients were under school age. We have been repeatedly informed by parents of children who have moved to our community from other areas that their physicians, often pediatricians, had told them that typhoid immunization is not necessary since, with pure milk and water supplies, the disease no longer occurs.

Symptoms and Signs

Table 1 shows the symptoms of the patients before admission. Prolonged fever without demonstrable cause was present in 34 cases. In more recent cases it was noted that the fever was not influenced by sulfonamide therapy. Headache, which would not be noted at 2 years of age or less, was the second most common complaint in older children. These symptoms were followed in order of frequency by general malaise, diarrhea, anorexia, vomiting, abdominal pain and drowsiness. An irrational state, irritability, stupor and delirium might be grouped under one heading as a very frequent symptom. Other less common complaints were vertigo, rash, weakness, chills, bleeding mouth, edema of the eyelids, urinary frequency, hematuria, cough, epistaxis, pain in the chest, earache, back pain, muscular aches, sore throat, pain in the neck, genital pain and pyuria.

Table 2 catalogues the physical signs on admission. Fever was present in every case. Next in order and obviously of great diagnostic importance were abdominal distention, which was present in 29 patients, and abdominal tenderness, noted in 28. Splenic enlargement, often mentioned as a sign in typhoid fever, was noted in only 10 children, while rose spots were found in only 2. Dehydration, noted in 5 patients, usually was due to lack of an adequate fluid intake at home. Tonsillitis and pharyngitis were present in 9 children and rales were present in 6. Other less common signs were catarrhal otitis, gingivitis, ankle clonus, stiff neck, lumbar tenderness, positive Kernig and Romberg signs, ptosis of the eyelids, generalized spasticity, rash, hemorrhagic diathesis and pain on knee motion.

The onset of symptoms of typhoid fever in early childhood, while not abrupt, is much less gradual than in adult life. The child may suddenly become feverish, lose his appetite, complain of abdominal pain, and become irrational or have other nervous symptoms. As the disease progresses he usually becomes drowsy or comatose. A minority of children may be so excitable or disoriented that encephalitis is suspected. As the disease progresses drowsiness usually supplants the excitability. The fever ranges from 39 to 40 C. (102 to 104 F.), and there is a gradual fall over a period of a week or more as the disease subsides. The pulse rate, while it may be normally elevated for the amount of fever, seldom is excessively rapid (above 120) and not infrequently may be rather slow. However, the slow dicrotic pulse of the adult typhoid patient seldom is seen in the child.

Duration

The duration of the disease could be calculated with a fair degree of certainty in only 39 cases, since the history often was

Table 3.
Laboratory Data

	No. of Cases Pos.	Neg.	Total Number Examinations
Blood cultures	23	13	91
Widal tests	26	15	83
Stool cultures	19	19	187
Urine cultures	3	17	54

unreliable or confusing. In the patients under 2 years of age (10 cases) the average duration was twenty-one days. In those from 2 to 6 years (14 cases) the average was twenty-six days, and in those from 6 to 14 years (15 cases) the average was thirty-two days. The shorter course in infancy, gradually increasing in length with age, is in agreement with other published reports.

Complications

The most frequent complication was upper respiratory infection, which was present in 9 cases. Five patients also had otitis media. Three children had definite bronchitis and three others had bronchopneumonia. Furunculosis and encephalitis each occurred twice. The following complications each occurred in one case: psychosis, arthritis, pyuria, gonococcus vaginitis, rectal prolapse, thrombocytopenia. There was one recurrence, and 2 patients died.

Laboratory Data

Table 3 summarizes the laboratory data in this series. In every case the diagnosis was confirmed by a positive blood or stool culture or by an increasing titer of agglutinins in the blood serum. Twenty-three of 36 patients tested had positive blood cultures. Seven of the 13 patients with negative cultures had only one culture made, while one had his first culture in the fifth week of the disease. Twenty-six of 41 patients had positive Widal tests. This low incidence (63 per cent) of positive Widal reactions illustrates the necessity of the combined use of blood, stool, and urine cultures with this procedure in the diagnosis of typhoid fever. Stool cultures were made in 38 cases, and were positive in 19. Urine cultures, made in 20 cases, were positive in 3.

The routine procedures for diagnosis of typhoid fever are the Widal test and stool and blood cultures. The following data on the 33 cases in our series in which all three procedures were employed demonstrate the danger of relying on any one test alone:

Combined Diagnostic Procedures (33 Patients)

Positive agglutinins, blood and stool cultures	4
Positive agglutinins and blood cultures	7
Positive agglutinins and stool cultures	4
Positive blood and stool cultures	4
Positive agglutinins only	6
Positive blood cultures only	7
Positive stool cultures only	1

Especially important are the 12 patients who had negative agglutination tests; in 4 of them the diagnosis was proved by positive blood and stool cultures, in 7 by blood cultures alone, and in 1 by stool cultures only.

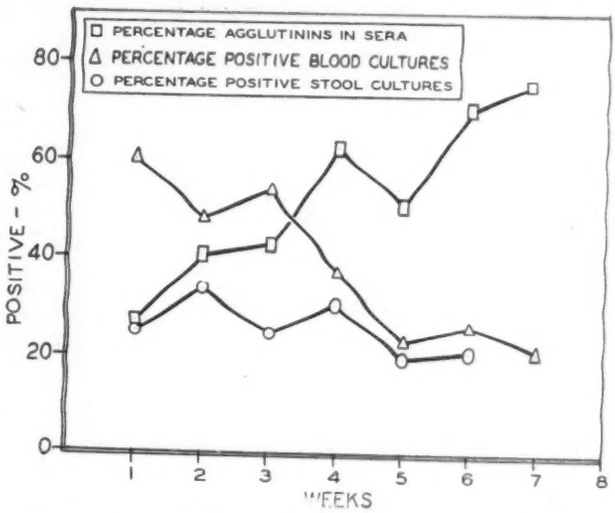

Chart 1. Laboratory Findings, in Relation to Duration of the Disease.

Chart 1 shows the percentage of positive laboratory findings according to the duration of the disease. During the first week of the disease 27 per cent of the children tested had agglutinins present in their sera in a dilution of at least 1:80. This increased gradually until at the sixth week 70 per cent of those tested had agglutinins. Positive blood cultures were more frequent during the first three weeks of the disease, but may persist into convalescence and even after defervescense, as is illustrated by the case of J. C. described below. Typhoid bacilli were found in the stools with about the same frequency (20-30 per cent) during each week of the disease.

The level of the white blood cell count during typhoid fever often has been discussed. During the first eight days we found that 24 counts were above 7,000, 10 of them being between 17,000 and 21,000; while 17 counts were below 7,000. From the eighth to the fourteenth day of the disease, 39 counts were above 7,000 and 22 were below this level. From the fourteenth to the twenty-second day, 25 counts were above

7,000 and 22 counts were below this level. It can be noted, however, that only 4 counts in this period were 11,000 or more. The general level of the white blood cell count varied very little after the twenty-second day of the illness.

It is then obvious that the absence of leukopenia or even an increased leukocyte count of from 11,000 to 21,000 does not rule out typhoid fever.

The differential white cell count on most children showed a slight predominance of the lymphocytic cells, but during the first week the higher counts usually were associated with a polymorphonuclear response.

Treatment

Treatment consists of an adequate fluid and vitamin intake, proper mouth care, sedation when necessary and enemas as needed in patients who tend to be constipated. The diet should be largely liquid, though soft foods are well tolerated. We see no reason for excluding milk from the diet; in fact, it was the basis of our diet in the more severe cases.

In 13 cases sulfonamides (sulfathiazole 6, sulfanilamide 2, sulfapyridine 3, sulfadiazine 1, sulfapyrazine 1) were tried in adequate dosages but without improvement, the possible exception being one infant of 3 months (B.S. described below) who received sulfathiazole. No adverse effect was noted from use of the sulfonamides.

Transfusions are of value in anemic patients, but may cause severe reactions in some cases. They should be used with caution.

Source of Infection

It was difficult to trace the source of infection in most cases, as many of our patients lived at a distance, so that a history of contact with other cases or with carriers and evidence of contamination of the milk and water supply could not be obtained. In 9 instances there was a history of a recently proven case of typhoid fever in the immediate family. The following examples illustrate the constant danger of exposure to typhoid which the non-immunized individual runs:

A child, aged 5 years, had a neighbor who had had typhoid fever two months before. The child had been drinking water from a spring at the bottom of the hill on which the typhoid patient resided.

Another patient, aged 15 months, the daughter of a law student, developed typhoid fever two weeks after a Negro nurse had returned to work following an undiagnosed short febrile illness. Typhoid bacilli later were found in the urine and stools of this nurse. This case is of special importance in revealing one of the many limitations of the "health card" method of certifying the health of servants; syphilis and tuberculosis are only two of the many diseases which they may carry.

Several children, including one 18 months of age, came down with the disease following a visit to the country. Here they had been drinking water from a well or spring. In the entire series one is impressed with the frequency of infection from a contaminated well or spring. Apparently the danger is much greater than when the water comes from a pump. However, rural living cannot be incriminated in all cases, since only 26 of our 46 patients were from rural areas, while 19 received their milk and water from an apparently well supervised supply.

Case Reports

The following two cases illustrate the difficulty of diagnosing typhoid fever in children.

B. S., aged 3 months, white, the child of a farmer, was admitted with the complaint of diarrhea of four days' duration. She was fretful at the onset, but had no fever for the first two days though she refused feedings and had fifteen to twenty yellow watery stools daily. Examination showed an acutely ill, dehydrated infant who was pale and had rapid, shallow respirations. The carbon dioxide combining power was 29 volume per cent, the hemoglobin was 61 per cent, and there were 4,400 white blood cells. The white cell count subsequently rose on the sixth day to 22,000. Sodium lactate solution and sulfathiazole were given and the child improved rapidly, the temperature reaching normal in forty-eight hours. She had one rise of temperature for a twenty-four hour period on the twelfth day, but otherwise appeared normal. Repeated blood cultures and Widal tests were negative, but typhoid bacilli were grown from the stool on the second and third hospital days. The entire duration of the fever was six days.

R. D., a white male of 4 years, was admitted because of spells of fever, vomiting

and diarrhea occurring at intervals of two to three weeks for four months. These would come on suddenly with vomiting, and usually lasted two to three days, after which he would again feel well and have no further symptoms for about three weeks. The present illness began suddenly twenty-four hours before admission, when he complained of headache and stomach ache, and was quite drowsy and feverish. He was nauseated at this time but did not vomit. Examination showed a well nourished, well developed child who did not appear acutely ill, though his temperature was 40.6 C. (105 F.). There was some abdominal pain, and he cried occasionally. The entire examination was negative. On the day of admission, the child had five stools, one of which contained free blood. The following day his temperature was normal and he seemed well, although stool cultures taken the day of admission showed a heavy growth of typhoid organisms. Thereafter, his temperature remained normal. This history of recurring fever, diarrhea, and vomiting in attacks of short duration would not lead the physician to suspect typhoid fever.

The following case history illustrates a most unusual finding—a positive blood culture which persisted for two weeks after the patient was afebrile and apparently well.

J. C., aged 5 years, was admitted because of pain about the jaw and throat for two weeks. In addition, there had been some drowsiness and vague abdominal pain. For five days he had had a fever and had been somewhat irrational. Physical examination showed an acutely ill, delirious child who was muttering incoherently most of the time. The skin was hot and dry. The lips were fissured and bleeding. The tongue was coated. The tonsils were large and infected. There was definite ankle clonus and a bilaterally positive Babinski sign. Eberthella typhosa was present in blood cultures on the fifth, twenty-ninth, and thirty-sixth days. The temperature reached normal on the fortieth day and remained so. However, blood cultures were positive on the fortieth, forty-seventh, and fifty-third days. The last positive culture was fourteen days after the temperature reached normal; thereafter, cultures were negative. During these fourteen days the child was perfectly well and gained five pounds in weight. Stool and urine cultures were consistently negative. The Widal test was positive in a dilution of 1:640 on the twentieth day and 1:160 on the thirty-second and thirty-ninth days. It was negative immediately after the child's temperature reached normal, but was again positive in a dilution of 1:160 on the forty-ninth day. The white cell count on the fourteenth day was 10,300, with a slight predominance of lymphocytes. It was 6,600 in the third week and fluctuated between 6,500 and 12,000 until convalescence was complete.

Summary

1. Forty-six cases of typhoid fever occurring in children are reported.

2. Thirty of the 46 patients were 6 years of age or less, while 10 were under 2 years of age.

3. The most important symptoms were prolonged fever without demonstrable cause, headache, and disturbances of the sensorium.

4. Common physical findings were fever, abdominal distention, abdominal tenderness and evidence of respiratory infection.

5. The duration of the disease was twenty-one days in children under 2 years, and increased progressively to thirty-two days in those from 6 to 14 years.

6. Blood cultures were positive in 23 of 36 patients. The Widal was positive in 26 of 41 patients who were repeatedly tested. Stool cultures were positive in 19 of 38 patients, while 3 of 20 patients had positive urine cultures.

7. The total leukocyte count varied from 4,000 to 21,000, more than half of the patients having a count above 7,000. There was a tendency for a slightly lower count as the disease progressed. Polymorphonuclear predominance early in the disease was usually followed by a moderate lymphocytosis.

8. Several cases are described in detail: one in which blood cultures were positive two weeks after defervescence; another of six days' duration in an infant of 3 months; and a third with recurrent attacks of fever of three to four days' duration over a period of four months.

9. The importance of routine immunization to typhoid early in the second year is stressed.

Abstract of Discussion

Dr. R. B. Lawson (Winston-Salem): I would like to ask Dr. McBryde what his technique of immunization is at the present time.

Dr. D. E. Robinson (Burlington): I would like to ask whether there was a great deal of difference in the severity of the case according to age.

Dr. C. A. Street (Winston-Salem): I want to know what he thinks about oral toxin.

Dr. McBryde: As for Dr. Robinson's inquiry as to the severity of the disease in relation to age, I don't believe we have enough cases to answer that. The general supposition is that typhoid fever is a little less severe and a little shorter in the young child. We have had two deaths in 46 cases, which is about the average mortality in reports on typhoid.

A great deal has been written about oral vaccine. Personally I don't believe it is worth anything. Dr. David H. Fogel and Dr. D. W. Martin at Duke, in a study made on some medical students, could not find that they had gained any immunity by taking oral vaccine.

The usual method of immunization is to use about a half dose for infants, gradually increasing it to the adult dose as they grow older. I use the triple vaccine rather than the straight vaccine. The booster dose is the method of choice to keep up the immunity in children.

Dr. W. E. Keiter (Kinston): Why do you cut the dose?

Dr. McBryde: My experience is that typhoid hits a child harder than any other vaccine.

A Member: Dr. McBryde, you said that some of the patients were vaccinated after they were exposed. What would be the effect if they received typhoid vaccine intravenously? Have you had any experience in that?

Dr. McBryde: I cannot tell you about the effect of intravenous typhoid vaccine at that stage, but we believe that intravenous administration does not give the immunity that subcutaneous administration gives.

SOME COMMON DISEASES OF THE EXTERNAL EAR

A. J. ELLINGTON, M.D.

BURLINGTON

This subject sounds very elementary—and it is. My reason for discussing these conditions is two-fold: First, they are so extremely common, and second, there is such a diversity of opinion concerning their treatment. I have had no experience with x-ray therapy, which some men have found to be very helpful.

There are four common types of external ear diseases: (1) eczema, (2) diffuse infection of the canal, (3) generalized infection of the entire ear and structures adjacent to the ear, (4) localized infection or furunculosis of the canal. Two or more of these groups may blend into each other.

Read before the Section on Ophthalmology and Otolaryngology, Medical Society of the State of North Carolina, Raleigh, May 12, 1943.

Eczema

The first type, eczema, is a most troublesome condition. We see it daily, and the lesions range from a few scales in the canal to a massive involvement of the whole ear, with or without discharge. Symptoms vary from a slight itching to intense pain. The etiology is attributed to allergy, general debility, bacterial or chemical irritation, and the pernicious practice of picking the ear. Treatment of eczematous conditions obviously begins with the elimination of the cause, if possible. Relief of symptoms may be obtained with analgesics and soothing applications. If we do not get results from ultraviolet radiation and various ointments such as phenol in zinc oxide and oil of cade, white tar, phenol in glycerine, or the proprietary ointments such as lenigallol zinc ointment, or otamma, we refer the patient to an allergist or a dermatologist.

Diffuse Infections of the Canal

The second group of cases, comprising the diffuse infections of the canal, are usually seen when the walls are swollen tight and the patient is in great pain, nervous and jittery from self-administered "dope" and crying for quick relief. The cause may be a middle ear discharge, picking the ear to remove wax, or some other injury. Frequently no cause can be found. The infection may be complicated by a secondary fungus growth, especially if there is a chronic condition.

The treatment of these diffuse infections calls for relief of pain with hot applications and analgesics, and often a narcotic. We employ a light pack of the canal to keep the walls apart in order to relieve pain and combat infection. In the past, we have used packs of alcohol, phenol in glycerine, ichthyol, ammoniated mercury ointment, auralgan, and a benzocaine solution such as otolgesic liquid or otalgic drops. (The last three are proprietary preparations.) Recently we have been using the more modern sulfonamide drug ointments and solutions. In cases where fungi are found or suspected, we use cresatin with 1 per cent thymol, or 2 per cent salicylic acid in alcohol. Sulzberger boric acid-iodine powder is very useful in a canal infection complicated by otitis media. However, it is necessary to have a large drum perforation, so that the canal and

middle ear can be thoroughly cleaned before using the powder. Although many good men do not advocate the procedure, we frequently get quick relief with incision and drainage. It requires a careful examination and our best judgment to decide when and where to use the scalpel in diffuse infections of the canal. An aspiration needle, for diagnosis, is a great help. The oral administration of sulfathiazole or sulfadiazine seems to shorten the attack.

To illustrate the variability of ear infections, I will summarize two similar cases.

Case 1. A patient from another city, with a recurrent canal infection, said that her otologist had recently treated her ear successfully without operation. She stated that her doctor remarked that he never incised an ear canal. Since she had recovered from the former attack without operation, we decided to try medical treatment. After a week of treatment and observation, the patient was still suffering intensely. An incision was made behind and below the ear and extending into the canal. Over half an ounce of pus was evacuated.

Case 2. A few days later another very similar case was treated with packs, compresses, and sulfadiazine, without relief, and we decided to make an incision over a prominent swelling in the same location as the incision in Case 1. In contrast with the first case no pus at all was found. The patient began to improve, however, and the condition cleared up promptly. Whether the incision promoted recovery or the sulfadiazine had a belated effect is a debatable question.

Generalized Infection of the Entire Ear and Surrounding Structures

The third group, cases of generalized involvement of the whole ear which usually extends to structures beyond, have about the same etiology and require the same management as the diffuse canal infections. Not only are skin and soft tissues involved, but perichondrium as well. The condition that should always be considered in a massive swelling of the ear is erysipelas. In erysipelas, relief comes quickly with adequate doses of sulfadiazine.

Furunculosis of the Canal

The fourth and most common group of ear infections are the cases of furunculosis of the canal. Localized infection of the canal may be caused by attempts to remove wax or satisfy itching with a toothpick or other object. Furuncles may be superimposed upon middle ear disease or eczema of the external auditory meatus. Frequently, as with boils on other parts of the body, no cause can be found. A mixture of wax and sea water or swimming pool water, and the use of a match stick to remove it account for a good deal of external ear trouble. Debilitating diseases such as diabetes, anemia, or avitaminosis may be predisposing causes.

Furuncles of the canal develop in the sebaceous or ceruminous glands or in the hair follicles, and always appear in the outer two-thirds of the canal, which is the location of these glands and follicles. Boils of the canal may come in crops and are frequently recurrent.

Differentiation between a real mastoiditis and furunculosis accompanied with swelling and tenderness over the mastoid may be difficult. In mastoiditis, there is a history of acute otitis media, profuse discharge, and extreme tenderness upon pressure over the mastoid tip and antrum, while in furunculosis there is swelling of the outer two-thirds of the canal, little or no discharge, and pain upon pulling or lifting the ear. Frequently the furuncle is visible. If the diagnosis cannot be made after a careful examination and history, two or three days' observation will usually make the diagnosis apparent.

The treatment of furunculosis consists in elimination of the local causes and in the proper care of predisposing systemic conditions. If the patient is seen early, an attempt may be made to abort the boil with local applications of antiseptics and heat. Pain may be sufficient to require a narcotic. After two or three days, if treatment has not relieved the condition, free incision usually becomes necessary. Some patients will tolerate incision under local anesthesia if the furuncle is near the entrance of the canal and well localized, but it is usually best to give a light general anesthetic.

In conclusion, it might be well to reiterate that diseases of the external ear are frequent and painful, and at times require keen judgment and resourcefulness for their diagnosis and treatment.

Technique over reason.—It is now possible to remove entire cerebral lobes with survival of the patient, yet too often these feats are but the barren triumphs of technique over reason.—F.M.R. Walshe: Diseases of the Nervous System, ed. 2, Baltimore, Williams and Wilkins, 1941, p. 72.

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NOVEMBER, 1943

A GOVERNOR'S VIEWS ON CENTRALIZATION OF AUTHORITY

A former governor of New York made the statement that " 'the preservation of . . . home rule by the States is not a cry of jealous Commonwealths seeking their own aggrandizement at the expense of sister States. It is a fundamental necessity if we are to remain a truly united country.' He went further and spoke of the 'present dangerous tendency to forget a fundamental of American democracy, which rests on the right of a locality to manage its own local affairs, the tendency to encourage concentration of power at the top of a governmental structure, alien to our system and more closely akin to a dictatorship or the central committee of a communist regime . . . We have met difficulties before this, and have solved them in accordance with the basic theories of a representative democracy. Let us not at this time pursue the easy road of centralization of authority, lest some day we discover too late that our liberties have disappeared.' "(1)

This governor, gentle reader, was Franklin D. Roosevelt(2). And how right he was!

1. Wriston, Henry M.: Challenge to Freedom, New York, Harper & Brothers, 1943, p. 110.
2. New York Times, March 3, 1930; January 2, 1931.

* * * *

A LAYMAN LOOKS AT POLITICAL MEDICINE

Mr. John Wesley Clay is Winston-Salem's Will Rogers. His syndicated column, "My Notions", had its origin in an advertisement of his printing establishment. So many people read his advertisement regularly and commented on it that he was asked to become a regular contributor to the *Winston-Salem Journal* and other daily papers. "My Notions" is perhaps read and quoted by more people than any other feature of the *Journal.*

On November 3 Mr. Clay paid a tribute to the medical profession, which is here, by the author's permission, reproduced in full.

MY NOTIONS
By John Wesley Clay

We do not like this new system of "socialized medicine" they are considering up in Washington. As we understand it they want to appoint government doctors (often political appointees) to look after us when we are sick.

Shucks, we like our true and tried system that has stood the test since America was young. We want our "family doctor," the doctor of our choice. 'Course we do not want to have to call any doctor, but when we do need a doctor we want a doctor who knows us and is interested in us personally, and above all we want a doctor of our choice.

Now if the medical profession had fallen down on the job there would be some reason for government appointed doctors, but the fact is that no profession has been more wide awake, progressive, and up-to-the-minute than the American medical profession.

There are two things that we desire for our native land, yea three, an unbridled press, an unhampered ministry, and a medical profession unblighted by political influence.

A SYNDROME SIMULATING ACUTE APPENDICITIS

During the past year physicians have encountered with increasing frequency a syndrome which simulates acute appendicitis, but in which no inflammation of the appendix is found at operation. Such patients look acutely ill; the face is brick-red; the conjunctivae are injected; and frequently the mucosa of the pharynx is red and inflamed. The appetite is impaired and the patient is drowsy. Accompanying these symptoms of generalized infection there is abdominal pain, sometimes generalized or peri-umbilical, but often localized to the right inferior quadrant, with more or less spastic reaction of the abdominal muscles. As a rule fever of varying grade is present, and it is sometimes quite high. The tentative diagnosis of acute appendicitis is fully justifiable. However, the leukocyte count is normal, or low, and the differential count does not show a "shift to the left".

The etiology of the syndrome is obscure, but one gains the impression that it is due to a virus infection, possibly of the nature of a "perityphlitis", with the respiratory tract serving as the portal of entry. The recognition and proper evaluation of this syndrome obviously are of great import, for it introduces an element of confusion into the vitally important differential diagnosis of acute appendicitis.

Very recently Butsch and Harberson[1] have reported their observations upon 50 cases of this pseudo-appendicitis syndrome, occurring in young soldiers. They point out that the onset is abrupt, with sharp abdominal pain, nausea and vomiting in the first few hours, flushed face, and inflamed soft palate, without soreness of the throat. Fever was irregular in occurrence and there was no leukocytosis or "shift to the left".

The authors believe that the syndrome is of virus origin, and they think that the abdominal pain is due to "involvement of sensory nerve roots", although neither of these assumptions seems very well grounded. No herpetic manifestations were observed. However, the etiology of the syndrome is of less importance than its recognition clinically, since it introduces a distinct element of uncertainty into the diagnosis of acute appendicitis.

1. Butsch, Capt. Winfield L. and Harberson, Lt. Col. James C.: Acute Virus Infection with Nerve Root Involvement Simulating Appendicitis, J.A.M.A. 123:405-407 (Oct. 16) 1943.

THE INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION

The twenty-eighth Annual Meeting of the Inter-State Postgraduate Medical Association of North America was held at the Palmer House in Chicago October 26-29. More than 3500 doctors were registered. Most of those in attendance were from the Midwest, but there were both speakers and visitors from all sections of the United States and from Canada. The retiring president was Dr. Frank Lahey of Boston, and he was succeeded by Dr. Fred Rankin, who is a son of North Carolina. The managing director is Dr. Arthur G. Sullivan of Madison, Wisconsin.

This meeting was unique in many ways. It was just what its name implies—a postgraduate course. Approximately 85 per cent of those in attendance were general practitioners. The program was arranged with their needs in mind, and the clinics and addresses were, for the most part, up to the minute. There were more than sixty addresses and diagnostic clinics packed into the four days of the assembly. Although they covered a wide range of subjects, there was no division of the membership into sections. The huge ballroom of the Palmer House was crowded to the limit most of the time, and apparently the audience was interested in the variety of topics presented.

On Thursday evening there was held the annual Assembly Dinner, featured by addresses on various war themes. The speakers were Dr. Lahey, Dr. Rankin, and Mr. Graham Hutton, Director of British Information Services, London.

There were a number of noteworthy features of this assembly. One was the clock-like precision with which it was run. Each day's session began exactly at 8 o'clock and continued until 9:30 or 10 p.m., with intermissions of an hour and a half for lunch and dinner. Each participant was given exactly thirty minutes for his presentation, and no partiality was shown—not even to the Surgeon General of the Army. Midway the morning and afternoon sessions there were intermissions of an hour to allow a review of the exhibits. These served the double purpose of giving the audience a chance to relax, and providing an opportunity for everyone to see both the scientific and the commercial exhibits without missing any of the program.

The careful selection of subjects for discussion, the precision with which the schedule was adhered to, and the minute care with which all details were arranged make the Inter-State Postgraduate Medical Association a model for any medical gathering to study.

* * * *

DR. OSCAR L. McFADYEN, SR.

When Dr. Roscoe McMillan was organizing the symposium on the county medical society for the Officers' Breakfast at the State Meeting last May, it was almost inevitable that he should have selected, to speak on "The Functions of a County Medical Society Secretary", Dr. Oscar L. McFadyen, Sr., of Fayetteville. For twenty years Dr. McFadyen had served as secretary of the Cumberland County and Fifth District Medical Societies. So successful had he been that the Cumberland County Society has long ranked as one of the model societies of the state. Anyone who may think that this "just happened" is referred to the July issue of the NORTH CAROLINA MEDICAL JOURNAL, in which Dr. McFadyen's article reveals how conscientiously and how intelligently he carried out his duties as secretary.

Death came suddenly to Dr. McFadyen; and those who knew him, and knew how he loved life, feel that he would have had it so. He would not have wanted to exist as an invalid. He will be sorely missed; for it is hard to visualize a meeting of county, district or state society without him. Let every reader of this JOURNAL get the July issue, and read again Dr. McFadyen's ideals for a county society; then resolve to do his best to make them apply to his own society.

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DR. MacNIDER RETIRES FROM TEACHING

On August 31 Dr. William deB. MacNider ended his official teaching career, which began forty-four years ago when he was made an instructor in biology at the University of North Carolina. This does not mean that he will no longer be connected with the University, for he will continue to be the Kenan Research Professor of Pharmacology. His research has made him an international authority on the kidney, and has brought him numerous honors from various sources.

It is fitting that he should have been made a member of the American Philosophical Society, for he has become one of the medical philosophers of our state and nation. It can be said with truth that Bill MacNider is one of North Carolina's brightest ornaments; yet the tribute which would be most appreciated by him is the one which the editor of the *Chapel Hill Weekly* paid him when he said: "The question that has always interested me most about Will MacNider has nothing to do with what he finds out from his microscopes and slides and cultures. It is: How does he manage to get around to help so many folks that are sick or otherwise in trouble?"

Although he has retired from the teaching profession, Bill MacNider will be a real teacher as long as he lives. North Carolina is proud of him, and his legion of friends, both medical and lay, wish for him many years of usefulness.

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DR. JAMES WATSON GOES TO ILLINOIS

A simple announcement on a postal card was received with real regret in the office of the NORTH CAROLINA MEDICAL JOURNAL. This announcement read: "Beginning with December 1, 1943, the address of Dr. Watson will be changed from Raleigh, North Carolina, to:

JAMES WATSON, M.D.
CHIEF MEDICAL OFFICER
DEPARTMENT OF PUBLIC WELFARE
176 WEST ADAMS STREET
CHICAGO 3, ILLINOIS"

This new position is in the nature of a flattering promotion, and is a deserved tribute to Dr. Watson's ability. Nevertheless, the many friends that he has made during his three-year stay in North Carolina, as Director of the Division of Mental Hygiene of the State Board of Charities and Public Welfare, will miss him for many years to come. He is not only an able psychiatrist; he is a cultured, genial, lovable gentleman, whose personality has literally endeared him to those privileged to know him. As you take up your abode in Chicago, Dr. Watson, the best wishes of the NORTH CAROLINA MEDICAL JOURNAL and of the medical profession of North Carolina will go with you. And in the vernacular of our state, remember that whenever you can find time to visit us the latch string will be hanging low for you.

CASE REPORTS

CLINICO-PATHOLOGICAL CONFERENCE

DUKE HOSPITAL

Presentation of Case

DR. CHRISTOPHER JOHNSTON: This white housewife, aged 38 years, was admitted September 29, 1943, with the chief complaint of heart trouble for fourteen years. The family history was not contributory. Her general health was said to have been good and the only positive finding in her past history was that she had frequent epistaxis as a child, but had had only three attacks in the past ten years.

When she was 24 she developed acute migratory polyarthritis and a "leaking heart". One year later she had an episode of weakness and epigastric fullness which apparently was completely relieved by digitalis and two weeks' bed rest. Ten years ago she married, and about one year later was delivered of a viable infant. Because of the heart trouble she remained in bed during the greater part of her pregnancy. Three months after delivery she again had an episode of weakness and was again treated with digitalis, responding satisfactorily in about two weeks. She continued to have these episodes at intervals of about one year, each more severe than the previous one. She began to have shortness of breath, abdominal swelling and some edema of the ankles. Four years ago, because of her condition, pregnancy was interrupted at one month, and two years ago another pregnancy was interrupted at about seven months. Eight weeks before admission she began to have more marked dyspnea and generalized edema. She was put to bed and given digitalis in doses of 25 drops, three times daily for one or two weeks, until she became nauseated. The dose was then changed to 15 drops daily, which she has continued to take without relief.

Physical Examination: The temperature was 37 C., the pulse 52, respirations 20, and blood pressure 130 systolic, 84 diastolic. The patient was obviously ill, with generalized pitting edema, ascites and some puffiness of the eyelids. The pupillary responses were normal and examination of the optic fundi revealed no changes. The teeth were dirty and worn; the tonsils atrophic and small. There were inspiratory moist rales over both lung fields.

The apex thrust of the heart was in the anterior axillary line. The rhythm was totally irregular and there were rather frequent premature beats, at times giving rise to bigeminal rhythm. Over the apex was a systolic murmur and a late diastolic murmur; the second sound over the second interspace was greatly accentuated. The liver was felt about 5 cm. below the right costal margin. Pelvic examination revealed nothing remarkable.

The hemoglobin was 13 Gm., or 84 per cent. There were 4,200,000 red blood cells and 11,000 white blood cells, with a normal differential count. The sedimentation rate was 14 mm. in an hour. The blood Kahn and Kline reactions were negative. Examination of the urine revealed a specific gravity of 1.022, an acid reaction, no sugar or albumin, and 10-20 white blood cells per high powered field, with an occasional hyaline cast. An electrocardiogram showed a rate of 110 with auricular fibrillation interrupted by bigeminal rhythm and runs of ventricular premature beats. There was a right axis deviation and the T waves were inverted in leads 2 and 3, with depressed ST segments in these leads.

Course in the hospital: Members of the house staff felt that the patient was overdigitalized. She was started on a cardiac, soft, salt-free diet, with fluids limited to 1,000 cc. daily, and was given enteric coated aminophyllin, 0.2 Gm. three times a day. On the second day she seemed rather restless and occasionally complained of dyspnea. On the third day she was given 1 cc. of salyrgan and was started on constant nasal oxygen because of cyanosis. The following day the urinary output was 2600 cc. The patient was still rather dyspneic. She vomited twice in the morning and brought up a few bloody clots. The dyspnea was thought to be somewhat improved, but she remained cyanotic, and on the fifth day the vomiting continued and the cyanosis increased. At 2:30 a.m. on the sixth day the house officer was called because the patient was gasping for breath, after waking from a quiet sleep. The patient had expired before the house officer arrived.

Discussion

DR. JOHNSTON: One unusual feature of this case is the apparent late age of onset, for

rheumatic fever usually does not cause severe myocardial or endocardial damage when the first attack occurs beyond the age of 20 years. On the other hand, the past history revealed that the patient had frequent epistaxis as a child, and it is quite likely that she had an active rheumatic process at that time, with cardiac damage, which passed unnoticed until the severe attack of rheumatism at the age of 24. Unfortunately, the patient was so ill as to preclude x-ray examination. With the clinical evidence as presented, the history of epistaxis in childhood, the definite acute attack of rheumatic fever at 24, and the subsequent course of events, the only possible diagnosis here is that of rheumatic heart disease with mitral stenosis. The termination seems typical of digitalis intoxication with increased ventricular irritability, resulting in numerous ventricular premature beats and finally terminating in systolic arrest of the heart.

DR. HENDRIX: In connection with the digitalis intoxication, it may be of some importance that this patient had a diuresis on the fourth hospital day. When such a diuresis takes place, digitalis, which is evenly distributed in the excess body fluids, is once more diverted to the circulation and re-distributed, thereby increasing the digitalis effect upon the heart. I think it would be just as well, therefore, to avoid giving diuretics to patients exhibiting signs of digitalis intoxication.

Pathological Discussion

DR. GEORGE MARGOLIS: The changes in the heart were so characteristic of patent interauricular septum associated with mitral stenosis (Lutembacher's syndrome)[1] that Dr. Baylin was able to recognize the condition when he saw the heart *in situ* at the autopsy table. The transverse diameter of the heart was almost two-thirds that of the thoracic cavity. There was a moderate compression atelectasis of both lungs, but only a slight shift of the heart to the left. The cardiac enlargement was the result of a pronounced dilatation and a moderate hypertrophy of all chambers except the left ventricle. The pulmonary conus was dilated to one and one-half times the size of the rather small ascending aorta. There was an interauricular septal defect measuring 3 x 1 cm. The mitral valve was scarred, so that it was functionally both insufficient and stenotic. The tricuspid valve was also scarred, but not functionally altered. Thrombi were found in the right auricle, and a few pulmonary infarcts had recently occurred. There was chronic passive congestion of the viscera, and considerable excess fluid was present in the body cavities.

Although Lutembacher[2] interpreted the mitral stenosis as a congenital lesion, it is now considered to be of rheumatic origin. In the case under consideration the valvular lesions were typical of healed rheumatic endocarditis.

The circulatory dynamics in the presence of an interauricular septal defect are of interest. The dilatation and hypertrophy of the right side of the heart and the enlargement of the pulmonary conus are the result of the shunting of blood from left to right through the defect. The usual explanation[3] for the shunting of blood is that the left auricular pressure is greater than the right. The presence of a mitral lesion produces a considerable increase in the shunt, depending upon the degree of obstruction.

In Lutembacher's syndrome one would not expect to find the left auricular dilatation which is so characteristic of mitral stenosis, since the septal defect would act as a safety valve for the residual blood in the left auricle. However, Dr. Baylin[1] has described dilatation of the left auricle as common, and it was present in this case. This dilatation is due to right sided cardiac failure, the pressure rising in the right auricle to the point where there is a reversal of the direction of the shunt. The passage of unoxygenated blood from right to left, through the defect, may be correlated with the appearance of the "cynanose tardive" that is observed in this syndrome.

Anatomical Diagnosis

(Lutembacher's syndrome)
Patent interauricular septum
Dilatation of the pulmonary conus

1. Baylin, George J.: Patent Interauricular Septum Associated With Mitral Stenosis: Lutembacher's Syndrome, Radiology 38:1-6 (Jan.) 1942.

2. Lutembacher, R.: De la stenose mitrale avec communication interauriculaire, Arch. d. mal. du coeur 9:237 (June) 1916.

3. (a) McGinn, S. and White, P. D.: Interauricular Septal Defect Associated With Mitral Stenosis, Am. Heart J. 9:1-13 (Oct.) 1933.
(b) Roesler, H.: Interatrial Septal Defect, Arch. Int. Med. 54:339-380 (Sept.) 1934.

Old healed rheumatic endocarditis of the mitral and tricuspid valves, with mitral insufficiency and stenosis

Thrombi in the right auricle

Recent pulmonary infarcts

Chronic passive congestion of the viscera.

DR. GEORGE BAYLIN: This patient, as the autopsy revealed, suffered from patent interauricular septum associated with mitral stenosis—the so-called *Lutembacher's syndrome.* Unfortunately, she was so ill that roentgen studies were not done. However, we have recorded two similar instances of the syndrome[1]. The roentgen findings are so characteristic as to be diagnostic of the condition.

The huge hilar shadows, which fluoroscopically show marked pulsations, are the most important features. However, the prominent left pulmonary artery that is displaced upward is also a constant finding. Barium studies reveal the characteristic posterior deviation so constant in patients with enlargement of the left auricle.

Although the antero-posterior film is usually adequate for diagnosis, fluoroscopy is more reliable; for then the enlargement of both auricles and of the right ventricle can be readily demonstrated. The aorta is usually normal in size, or actually smaller than normal. The changes in the heart are such that the left bronchus and left lung are frequently so compressed that atelectasis ensues, resulting in some shift of the heart to the left.

In an interpretation of the roentgen picture it is most important to recognize the bizarre shadows as part of the cardiovascular system rather than pulmonary or hilar masses.

Importance of ventilation in preventing air-borne infections.—If the concentration of the pathogenic material in the air can be kept below a certain critical level, infection only seldom occurs, i.e., the dosage of inhaled pathogens is not sufficient to cause disease—although infection may occur if the dosage is increased by prolonged inhalation of even a small concentration of the infectious agent. Thus any measure which will sufficiently lower the concentration of an air-borne infectious agent should be effective in reducing or eliminating infection. The means which has been most commonly employed for this purpose is ventilation. If a sufficient number of air changes per hour can be secured, the building up of a high concentration of any infectious agent can be prevented.—Robertson, O. H.: Air-Borne Infection, Science 97:498 (June 4) 1943.

MEDICOLEGAL ABSTRACT

J. F. Owen, M.D., LL.B.
Raleigh

Workmen's compensation: Disfigurement is not compensable unless it be so permanent and serious as to hamper or handicap the person in his earning or in securing employment.

Frequently the question of disfigurement enters into cases heard before our Industrial Commission and courts, and this case is being offered in order to give the prevailing rule with regard to the disposition of suits of this kind.

In this particular case an employee sustained an injury to his back while he was assisting in loading a box car. There was some disfigurement, the exact location of which is not given, and it is stated that the injury will probably prevent his being able to do heavy manual labor for life. He returned to his job after the statutory period of seven days, and the company which employed him continued to pay his usual salary but, of course, arranged for him to have lighter work. The claimant, although receiving full wages, sought compensation before the Industrial Commission so that this body might continue to have jurisdiction over his case. It should be stated in this connection that this protected the employee against the possibility that the employer might after the expiration of twelve months discontinue the employment. The Commission held that the injury to the claimant's back was compensable, but failed to award compensation for the disfigurement which resulted from the accident. The compensation was to be in force from the date of the accident, April 26, 1940, for a period of three hundred weeks, less the time that he had been paid full wages. There were also certain recommendations as to medical and hospital expenses. The claimant, being dissatisfied with the findings of the Industrial Commission, appealed to the Superior Court.

When the case came on to be heard, the Judge, being of the opinion that the full Commission was in error in directing the award as above quoted, and that no award for compensation could be made at that time in view of the facts submitted, ordered the said award stricken and remanded the cause to the full Commission. The plaintiff excepted and appealed to the Supreme Court.

The Appellate Court felt that the recommendations and award made by the Industrial Commission in the first instance should be sustained. The Supreme Court was of the opinion that compensation for disfigurement was not required by the Compensation Act, its allowance or disallowance being within the legal discretion of the Commission. Furthermore, from the evidence, it was not made to appear that the claimant had sustained disfigurement within the provisions of the statute. Disfigurement, according to the court, is a blemish, a blot, a scar or mutilation that is external and observable, marring the appearance. The words, "facial", "head", "body" and "member or organ" are used in connection with the term disfigurement. There must be an outward observable blemish, scar or mutilation which tends to mar the appearance of the body, and under the express terms of the Act it must be serious. For instance, the puncture of an ear drum or the removal of a kidney would result in injury, perhaps serious, but there would be no disfigurement.

In another case of a similar nature it has been

held as follows: "To warrant compensation for disfigurement it must be so permanent and serious that it, in some manner, hampers or handicaps the person in his earning or in securing employment, or it must be such as to make the person repulsive to other people." Therefore the Supreme Court was of the opinion that the award made by the Industrial Commission was correct, being based upon the above precedent. As a consequence the conclusions and awards of the Industrial Commission were affirmed without qualification. (North Carolina Supreme Court Reports. Vol. 223, page 233. Decision rendered Spring term, 1943.)

CORRESPONDENCE

Hamlet, N. C.
Oct. 18, 1943

North Carolina Medical Journal
Winston-Salem, N. C.

Several times a month we receive letters from New York like the one enclosed. The Board of Medical Examiners of North Carolina has successfully kept this undesirable type of doctor out of North Carolina, in spite of pressure on the Board from New York and North Carolina attorneys. You may print this letter to keep the profession in North Carolina informed if you care to.

Yours very truly,
W. D. JAMES, M.D.
Secretary, Board of Medical Examiners of North Carolina

October 1, 1943

To the Secretaries of the
State Boards of Medical Examiners

Gentlemen:

This is to advise you that evidence having been presented that Henry Katz, New York, has been convicted of a felony, the Board of Regents at its meeting held September 17, 1943,

VOTED, That pursuant to the provisions of subdivision 1 of section 1264 of the Education Law, medical license No. 13325, issued under date of June 30, 1916, to Henry Katz, permitting him to practice medicine in the State of New York, be revoked, annulled and canceled, and that his registration or registrations as a physician, wherever they may appear, be ordered annulled and canceled of record; and that the Commissioner of Education be empowered and directed to execute, for and on behalf of the Board of Regents, all orders necessary to carry out the terms of this vote.

Doctor Katz was last registered for the year 1942 from 1005 Jerome avenue, New York City.

Yours very truly,

ROBERT R. HANNON, M.D., Secretary
New York State Board of Medical Examiners

AMERICAN MEDICAL ASSOCIATION
COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

A Statement of General Policies

Pursuant to carrying out the duties imposed on it by the House of Delegates, the Council has adopted the following general policies:

1. The Council on Medical Service and Public Relations recognizes the desirability of widespread distribution of the benefits of medical science; it encourages evolution in the methods of administering medical care, subject to the basic principles necessary to the maintenance of scientific standards and the quality of the service rendered.

   It is not in the public interest that the removal of economic barriers to medical science should be utilized as a subterfuge to overturn the whole order of medical practice. Removal of economic barriers should be an object in itself.

   It is in the public interest that the standards of medical education be constantly raised, that medical research be constantly increased and that graduate and postgraduate medical education be energetically developed. Curative medicine, preventive medicine, public health medicine, research medicine, and medical education, all are indispensable factors in promoting the health, comfort and happiness of the nation.
2. The Council through its executive committee and secretary shall analyze proposed legislation affecting medical service. Its officers are instructed to provide advice to the various state medical organizations as well as to legislative committees concerning the effects of the proposed legislation. It shall likewise be the duty of its officers to offer constructive suggestions to bureaus and legislative committees on the subject of medical service.
3. The Council approves the principle of voluntary hospital insurance programs but disapproves the inclusion of medical services in those contracts for the reasons adopted by the House of Delegates at the 1943 meeting.
4. The Council approves voluntary prepayment medical service under the control of state and county medical societies in accordance with the principles adopted by

the House of Delegates in 1938. The medical profession has always been very much opposed to compulsory health insurance because (1) it does not reach the unemployed class, (2) it results in a bureaucratic control of medicine, and interposes a third party between the physician and the patient, (3) it results in mass medicine which is neither art nor science, (4) it is inordinately expensive, and (5) regulations, red tape and interference render good medical care impossible. Propaganda to the contrary notwithstanding, organized medicine in general, and the American Medical Association in particular have never opposed group medicine, prepayment or non-prepayment, as such. The American Medical Association and the medical profession as a whole have opposed any scheme which on the face of it renders good medical care impossible. That group medicine has not been opposed as such is evidenced by the fact that there are many groups operating in the United States which have the approval of the medical profession, and members of these groups are and have been officials in the national and state medical organizations. That group medicine is the Utopia for the whole population, however, is not probable. It may be and possibly is the answer for certain communities and certain industrial groups if the medical groups are so organized and operated as to deliver good medical care.

5. The Council believes that many emergency measures now in force should cease following the end of hostilities.
6. The Council believes that the medical profession should attempt to establish the most cordial relationships possible with allied professions.
7. There is no official affiliation between the American Medical Association and the National Physicians Committee. However, since it is the purpose of the National Physicians Committee to enlighten the public concerning contributions which American medicine has made and is making in behalf of the individual and the nation as a whole, it is the opinion of the Council that the medical profession may well support the activities of the National Physicians Committee and other organizations of like aims.
8. American medicine and this Council owe a responsibility to our colleagues who are making personal sacrifices to answer the call of the armed forces. Therefore, the Council expresses the desire to cooperate with the medical committee on post-war planning in order to assist our colleagues in reestablishing themselves in the practice of medicine, and in the preservation of the American system of medicine.

BULLETIN BOARD

IMPORTANT NOTICE!

TO COUNTY SOCIETY SECRETARIES:

Within the next week or two we will mail from this office your 1944 Annual Report Blanks. They should reach you in ample time for your annual "election-of-officers" meeting. In this connection, I should like to remind you:

1. The Ninetieth Session of the House of Delegates increased annual dues of the Society from $8.00 to $10.00 to begin January 1, 1944. This increase is for the duration and for six months thereafter, to counterbalance the waiving of dues of fellows with the Armed Forces.
2. When listing your officers and members please state Specialty.
3. Give complete information for any new members. If transferees from other County Societies, please indicate.
4. List all Fellows in Service.
5. Be sure to give the names of your Delegates to the State Society meeting.
6. Make all checks payable to Medical Society of the State of North Carolina.
7. Be sure to get your reports in by March 1 or as soon thereafter as possible.

ROSCOE D. MCMILLAN, M.D.
Secretary-Treasurer

NEWS NOTES FROM THE NORTH CAROLINA TUBERCULOSIS ASSOCIATION

Dr. Julian S. Miller, editor of the **Charlotte Observer**, *has been chosen for the state chairman of the 1943 Christmas Seal Sale campaign.*

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To The People of North Carolina

The North Carolina Tuberculosis Association joins in the nation-wide annual sale of Christmas Seals again this year, the campaign dates covering the period between November 22 and Christmas Day.

Christmas Seals build guard-rails around the top of the precipice instead of equipping ambulances to be rushed to the foot of the chasm to pick up the fallen victims. They provide and finance a program of prevention of tuberculosis which killed 60,000 people in this country last year and is still the greatest fatal scourge of persons between 15 and 45. They represent an effective form of personal insurance in which all of us can participate for our individual defenses against the subtle and insidious threats of this menacing disease.

As State Chairman for this year's campaign, I urge our people to keep this cause in their keen remembrance and to reserve an appropriate place for its appeal in their Christmas plans and pledges.

Sincerely yours,

Julian S. Miller

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The Executive Committee of the North Carolina Tuberculosis Association met in Raleigh on October 8. The following members were present: Dr. R. L. Carlton, president; Mrs. Marie B. Noell, secretary; Dr. J. J. Combs, treasurer; Dr. M. D. Bonner and Dr. P. P. McCain. Dr. Derwin Cooper served as proxy for Dr. David T. Smith.

Walter Wenkert, of the National office discussed the rehabilitation problem in North Carolina. Dr. Carlton appointed a committee from the state board of directors to study this situation further. This committee was: Dr. M. D. Bonner, chairman; Dr. H. L. Seay, Mrs. Charles E. Platt, Dr. S. M. Bittinger and Dr. Derwin Cooper. This committee will meet later and invite representatives of the State Rehabilitation Service, the North Carolina Employment Service, The Welfare Department, the State Board of Health and other allied agencies to discuss this important phase of tuberculosis control.

The matter of a Negro Health Educator and the possibility of additional workers in the counties were discussed.

News Notes From the State Board of Health

In order to secure manpower to prosecute the war in which we now are engaged, that the dignity of man may not be destroyed, our government has passed what is known as the Selective Service Act, providing for the selection of manpower in the democratic way. First, this Act applied to persons between the ages of 21 and 38. Then it was extended to include boys above 18. Now, it is proposed to draft fathers from among all eligible age groups.

And yet, there remains practically untapped a manpower pool of between 400,000 and 500,000, of whom 30,500 are residents of North Carolina—men who have been rejected for military service because they are infected with syphilis. Although an order was issued providing for their treatment and induction into the armed forces, this is not being done to any appreciable degree, according to Dr. Carl V. Reynolds, North Carolina State Health Officer, who calls attention to the fact that they can be cured, through intensive treatment, in from five to ten days, and made fit for military service.

In June of this year, the State Laboratory of Hygiene, a Division of the North Carolina Board of Health, examined 31,163 specimens for syphilis, of which 2,866 were found to be positive. During that single month, there were 62 specimens examined that had been taken from infants **under one year of age**—and, of that number, 10 were found to be positive. There were 10 positive specimens found among a total of 124 taken from children from one to 4 years old, and 28 among the 277 from children from 5 to 9 years old.

The presence of syphilis among these infants indicates very clearly that one or both of the laws affecting the marital relations of syphilitics are not being enforced. In 1939, the General Assembly of North Carolina passed two very significant acts. One provides that a person desiring to marry must undergo a serological test and if that test is found to be positive there can be no marriage until the infected person has undergone sufficient treatment to become non-infectious. The other provides that **every** pregnant woman, as soon as her pregnancy is discovered, not "may" but "**shall** have a blood sample taken and submitted to a laboratory approved by the North Carolina State Board of Health for performing the Wassermann test or other approved tests for syphilis." Any woman unable to pay a private practitioner for this service may have such blood sample secured by the county health officer, or, if there is none, the county physician of the county in which she resides. Whether a blood test was made during the pregnancy of the mother is required to be shown on the birth certificate of every baby born in North Carolina.

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There were 100 cases of typhus fever in North Carolina last year, resulting in 10 deaths. In 1941, when there were 78 cases of endemic typhus fever reported to the State Board of Health's Division of Epidemiology, 4 died.

The North Carolina State Board of Health has a typhus control unit, in which rat-extermination plays a leading role. This unit works through local health departments.

News Notes From the Bowman Gray School of Medicine of Wake Forest College

The second series of the Nathalie Gray Bernard Lectureships were held in the amphitheatre of the Bowman Gray School of Medicine on October 26, 27, and 28. Dr. William B. Castle, Professor of Medicine at Harvard University, was guest speaker.

Dr. Castle is widely known in the field of medicine, and has especially made fundamental contributions in his research on anemia. He has also received many awards for distinguished service in the sciences promoting health.

Dr. Castle chose for the subject of his lectures "Some General and Particular Aspects of the Pathological Physiology of Anemias."

* * * *

Dr. Tinsley R. Harrison, Professor of Medicine, left on October 27 for California, where he will give a series of lectures on cardiovascular diseases. He will speak to the American Heart Association in Los Angeles, to the Academy of Medicine in San Diego, and to the Stanford University School of Medicine in San Francisco. On his way to California, he stopped at Tuscaloosa, where he gave an address on "Cardiac Dyspnea" at the School of Medicine of the University of Alabama.

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Dr. Wingate M. Johnson, Professor of Clinical Medicine, gave a paper on "The Care of the Aged" before the Inter-State Postgraduate Medical Association of North America in Chicago on October 26.

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Dr. Everett O. Jeffreys, formerly connected with the Jefferson Medical School, has been made Assistant Professor of Surgery in Charge of Neurosurgery at the Bowman Gray School of Medicine. He assumed his new duties in October.

Dr. George T. Harrell, Associate Professor of Preventive Medicine, and Dr. Frank R. Lock, Associate Professor of Obstetrics and Gynecology, attended the meeting of the Association of American Medical Colleges in Cleveland on October 25, 26, and 27.

News Notes From the University of North Carolina School of Medicine

Dr. W. R. Berryhill attended the meeting of the Association of American Medical Colleges in Cleveland the week of October 24, and also the centennial celebration of the founding of the School of Medicine at Western Reserve University.

* * * *

The following members of the faculty of the School of Public Health attended the meetings of the American Public Health Association in New York during the week of October 11: Drs. D. F. Milam, H. W. Brown, Wm. L. Fleming, John J. Wright, Lucy S. Morgan, and Professors W. Brewster Snow and Ruth W. Hay. Dr. Milam also attended a Nutrition Conference called by the Nutrition Foundation on October 11 in New York.

Dr. Milam presented a paper "Nutrition Survey of an Entire Rural County in North Carolina", and Dr. Lucy S. Morgan presented a paper on field training in health education.

* * * *

The following are new members of the faculty of the School of Public Health: Dr. John J. Hanlon in Public Health Administration and Dr. John E. Larsh, Jr., in Parasitology. Dr. Hanlon was formerly with the Tennessee State Department of Health and Dr. Larsh was at the Johns Hopkins University.

North Carolina Public Health Association

The North Carolina Public Health Association held its Thirty-Third Annual Meeting at Raleigh on October 25 and 26. Among the North Carolina doctors who appeared on the program were Dr. R. E. Fox, Dr. J. Roy Hege, Dr. G. M. Cooper, Dr. R. D. McMillan, Dr. P. P. McCain, Dr. David T. Smith, Dr. W. P. Jacocks, Dr. M. J. Rosenau, Dr. J. H. Hamilton, Dr. G. H. Sumner, Dr. J. W. Vernon, Dr. N. Thomas Ennett, Dr. John Wright, Dr. Merle Carson. The guest speaker was Dr. James K. Hall of Richmond, Virginia, whose subject was "Human Health and the Common Weal".

Officers of the Association for 1942-1943 were Dr. N. Thomas Ennett, President; Dr. William P. Richardson, President-Elect, and Dr. Clem Ham, Secretary-Treasurer.

Ninth District Medical Society

Officers elected at the meeting of the Ninth District Medical Society, held in Statesville on September 30, are Dr. Douglas Hamer, Lenoir, President; Dr. W. Grimes Byerly, Lenoir, Vice President; Dr. Verne Blackwelder, Lenoir, Secretary, and Dr. T. W. Seay, Salisbury, Assistant Secretary. The 1944 annual meeting is to be held at Lenoir.

Medical Society of Virginia

The Medical Society of Virginia held its annual meeting at Roanoke, Virginia, on October 25, 26, and 27. Officers of the Society for 1942-1943 were Dr. J. M. Emmett, President; Dr. C. B. Bowyer, President-Elect; Dr. W. L. Powell, Dr. W. R. Payne, and Dr. P. W. Boyd, Vice Presidents; and Miss Agnes V. Edwards, Executive Secretary-Treasurer.

Forsyth County Medical Society

The Forsyth County Medical Society held its monthly meeting in Winston-Salem on October 12. Dr. Everett O. Jeffreys, recently arrived from Philadelphia to become Assistant Professor of Surgery in charge of Neurosurgery at the Bowman Gray School of Medicine, spoke on "Cranio-Cerebral Trauma".

Dr. Ward Elected to Board of Medical Examiners

Dr. John LaBruce Ward of Asheville has been unanimously elected by the State Board of Medical Examiners to fill the unexpired term of Dr. Lewis W. Elias, who died August 10.

News Notes

Dr. Edmond L. Rice has succeeded Dr. C. L. Haywood as Surgeon-in-Chief at the Hugh Chatham Memorial Hospital, Elkin. Dr. Haywood died of a heart attack in August. Dr. Rice goes to Elkin from the Tayloe Hospital in Washington, N. C.

* * * *

North Carolina doctors who are participating in the program of War-Time Graduate Medical Meetings for South Carolina are Dr. Tinsley R. Harrison of the Bowman Gray School of Medicine, Winston-Salem, and Drs. Robert McKay and L. C. Todd of Charlotte. This program began on October 11 and will continue through November 17. Most of the faculty is composed of doctors from South Carolina.

Medical and Surgical Relief Committee of America

To help quiet the convoy-worn nerves of American merchant seamen, the Medical and Surgical Relief Committee of America has donated to the War Shipping Administration 4000 capsules of sedatives requested for use in recuperation centers in England and North Africa, reported Dr. Joseph P. Hoguet, medical director of the Committee.

This recent gift of the Medical and Surgical Relief Committee is but a small part of the $2500 total of medical equipment requested by the War Shipping Administration's Medical Division in New York. To War Shipping Administration representatives serving in various foreign ports, the Committee has donated 16 large emergency medical field sets, at a cost of $140 each. Specially designed by the Committee's medical board, the field set consists of 2 valise-sized cases, for use by doctors for wounded and ill merchant seamen. Its drugs, antiseptics, bandages, sutures, syringes and minor surgery instrument roll equip it for any emergency, Dr. Hoguet pointed out.

Conducted for over three years, the Medical and Surgical Relief Committee is dedicated to supplying medical and surgical aid to the armed and civilian forces of the United Nations. To date, over $572,000 of drugs, instruments, serums, vitamins and other equipment have been distributed to maritime and military units of America and her Allies, to needy hospitals, war-zone welfare agencies and to civilian defense posts throughout the free world. "So far," declared Dr. Hoguet, "not one request from a reputable source has been turned away ... and our donations have circled the globe."

Third Annual Schering Award Competition

The Third nation-wide competition for the Schering Award is now open. Three major prizes of a total value of $1000.00 will be awarded to undergraduate medical students who submit the best critical dissertations on the subject "Hormones and Cancer". As in previous years, the Judges for the Schering Award will include outstanding American investigators in the fields of endocrinology, medicine and chemistry:

R. G. Hoskins, Director of the Memorial Foundation for Neuro-Endocrine Research, Harvard Medical School; and Editor Emeritus of **Endocrinology** and of the **Journal of Clinical Endocrinology**, official organs of the Association for the study of Internal Secretions.

E. P. McCullagh, Section of Endocrinology and Metabolism, the Cleveland Clinic.

E. C. Hamblen, Associate Professor and Chief of the Endocrine Division, Department of Obstetrics and Gynecology, Duke University School of Medicine.

E. Novak, Associate Professor of Obstetrics, University of Maryland School of Medicine and College of Physicians and Surgeons.

H. M. Evans, Institute of Experimental Biology, University of California.

F. C. Koch, Chairman of the Department of Biochemistry, University of Chicago.

E. Shorr, Assistant Professor of Medicine, Cornell University Medical College, and the New York Hospital.

The Schering Award was established by the Schering Corporation in 1941, for the purpose of encouraging a wider interest in current endocrinological developments among undergraduate medical students. The competition is sponsored and administered by the Association of Internes and Medical Students, and participation is limited to undergraduate medical students in the United States and Canada. It is noted that all manuscripts must be submitted no later than January 15, 1944. Communications should be addressed to "The Interne", 7 East 42nd Street, New York 17, N. Y.

New Journal Sheds Light on Soviet Medicine

The first number of the American Review of Soviet Medicine which was scheduled to appear on October 25 features papers by Dr. E. I. Smirnov, executive director of the Red Army Medical Corps, and Dr. Nikolai N. Burdenko, chief surgeon of the Red Army. Dr. Smirnov's paper reveals for the first time the pre-war plans made for the care and hospitalization of the wounded, their shortcomings under actual battle conditions, and their subsequent drastic revision to meet the exigencies of mobile defense and attack. Dr. Burdenko, who has recently been granted honorary membership in the International College of Surgeons, discusses the effects of frostbite on the nervous system.

The issue also contains three survey papers: "Cancer Research in the Soviet Union," by Michael B. Shimkin, M.D., past assistant surgeon, National Cancer Institute, Bethesda, Md.; "Physical Culture in the Soviet Union," by Percy M. Dawson, M.D., professor of physiology, Duke University, Durham, N. C.; and "Twenty-Five Years of Health Work in the Soviet Union," by Henry E. Sigerist, M.D., director of the Institute of the History of Medicine, Johns Hopkins University, Baltimore, Md., and editor of the review.

Textbooks Wanted For Russian War Relief

Vast public health and rehabilitation problems facing Soviet authorities in the t..ousands of devastated communities recaptured from the Nazis this year are reflected in an appeal just received by Russian War Relief for more than 200 American textbooks urgently needed in Soviet medical schools and libraries.

Dr. Vladimir V. Lebedenko, noted Soviet neurosurgeon now in the United States on a Red Cross mission, gave the list to Russian War Relief with the plea that the books be collected as quickly as possible to aid in the training of thousands of additional physicians and other personnel needed to handle the enormous post-war job of rehabilitating soldiers and civilians suffering from the terrible impact of this war.

Russian War Relief pointed out that whereas medical textbooks previously requested by Soviet authorities were devoted to problems of military medicine, this new list is much broader in subject matter, ranging from plastic surgery to nutrition. It reflects a growing interest of Soviet health officials in the latest American findings in such fields as the treatment of tuberculosis and pneumonia, dietetics, child psychiatry and play therapy, stomach diseases, war neuroses, occupational therapy, psychology and mental hygiene. A few works on cattle and insect diseases are also needed.

Gifts of textbooks from American physicians and medical associations have played a part in the training of more than 66,000 doctors in the U.S.S.R. since June, 1941, according to Russian War Relief. Many letters have been received from physicians and students expressing deep gratitude for the books. The writers particularly mention their pleasure at receiving messages from the donors.

Dr. Lebedenko's medical booklist is available upon request from Russian War Relief, 11 East 35th St., New York 16, N. Y. Books donated should be sent to the above address.

The Mead Johnson Vitamin B Complex Award

Nominations are solicited for the 1944 award of $1,000 established by Mead Johnson and Company to promote researches dealing with the B complex vitamins. The recipient of this award will be chosen by a committee of judges of the American Institute of Nutrition. The award will be given to the laboratory (nonclinical) or clinical research worker in the United States or Canada who, in the opinion of the judges, has published during the previous calendar year January 1 to December 31 the most meritorious scientific report dealing with the field of the B complex vitamins. While the award will be given primarily for publication of specific papers, the judges are given considerable latitude in the exercise of their function. If in their judgment circumstances and justice so dictate, it may be recommended that the prize be divided between two or more persons. It may also be recommended that the award be made to a worker for valuable contributions over an extended period but not necessarily representative of a given year. Membership in the American Institute of Nutrition is not a requisite of eligibility for the award.

To be considered by the committee of judges, nominations for this award for work published in 1943 must be received by the secretary, Arthur H. Smith, Ph.D., Wayne University College of Medicine, Detroit, by Jan. 10, 1944. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate the task of the committee of judges in its consideration of the nomination.

AUXILIARY

NATIONAL DEFENSE PROGRAM

The War Participation Committee of the Auxiliary to the Medical Society of the State of North Carolina has a four-purpose program outlined for this year.

Our main project will again be to raise money for use by the Medical and Surgical Relief Committee of America to supply emergency medical sets to small ships of the Coast Guard and Navy. We will conduct a fund raising campaign to help distribute these sorely-needed kits to patrol boats, destroyer escorts, mine sweepers, sub-chasers, rescue-ships and other small vessels. Each kit costs $25.00, and with it on board the personnel is prepared to give immediate treatment to casualties until the small, doctorless ships can reach a shore hospital. The Sixth Naval District, which includes our area, has headquarters in Charleston, S. C. To date it has received twenty kits of a promised total of fifty. We propose to subscribe the lacking thirty kits.

We hope to make an official presentation of the sets to a Navy or Coast Guard officer. Four such kits have been presented to the commanding officers of vessels now under construction at the Elizabeth City Shipyard. We will be particularly happy to donate kits needed by boats built right here in North Carolina.

To obtain the funds for the kits we shall sell book matches with the Medical and Surgical Relief Committee's emblem on them, and medical license plates. The matches are 50c a box (for fifty folders); the plates, $1.50 each. We shall initiate our sale on December 7, Pearl Harbor Day, as was done last year. The sale will continue throughout the year.

Our second objective is recommended by the Advisory Committee of the American Medical Association. They suggest that we help enlist the 65,000 nurses needed for an accelerated nurses' training course. We can further the program by arranging meetings with high schools and lay organizations to explain the Bolton Act, which was approved June 15, and which provides "for the training of nurses for the armed forces, governmental and civilian hospitals, health agencies and war industries through grants to institutions providing such training and for other purposes." Each county War Participation Chairman shall ascertain from her local hospital how she can best serve that institution and her country.

Third, we shall continue to promote interest among our members in first aid classes, nutrition, nurses aides, surgical dressings, canteen units, home nursing, blood banks, motor corps, war bond sales, victory gardens, entertainment of service men, and other work with the Red Cross or other organizations concerned with national defense.

Last but not least, we must not forget salvage. Donations of equipment have fallen off considerably during the last six months. Although surgical equipment is hard to procure these days, the Medical and Surgical Relief Committee again appeals to us to put on special drives for supplies. Particularly called for are thermometers, scalpels, clamps, forceps, scissors (surgical or ordinary), safety-pins and small wooden-handled knives (about the size of a paring knife) or sturdy penknives.

May spirit so stimulate our enterprise that goals aspired to may be fulfilled. When the year is over, I hope to look back on the present proposals with pride in the amount of work accomplished for the war effort by the doctors' wives in North Carolina.

MRS. B. W. ROBERTS
War Participation Chairman

* * * *

MEETING OF EXECUTIVE BOARD

The fall meeting of the Executive Board of the Auxiliary to the Medical Society of the State of North Carolina was held at the home of Dr. and Mrs. P. P. McCain at Sanatorium, on October 14.

Mrs. McCain, in her very gracious way, welcomed twenty-one members of the Board and entertained them at a delicious luncheon.

The President, Mrs. K. B. Pace of Greenville, presided at the meeting. She urged every member to use as her slogan for the year, "Study to show thyself approved." She especially stressed the war participation work, the McCain Endowment Fund, the Stevens Bed and the McCain Bed.

Reports were given from the chairman of the standing committees and from the councilors. They presented their completed plans for the year's work.

Dr. Rachel Davis of Kinston, Advisory Board Chairman, brought greetings from the Medical Society and made an interesting talk.

The following were present: Mrs. K. B.

Pace, Greenville; Mrs. John T. Saunders, Asheville; Mrs. R. A. Moore, Winston-Salem; Mrs. Fred Haar, Greenville; Mrs. E. C. Judd, Raleigh; Mrs. Harry L. Johnson, Greensboro; Dr. Rachel Davis, Kinston; Mrs. P. P. McCain, Sanatorium; Mrs. G. G. Dixon, Ayden; Mrs. John C. Reece, Winston-Salem; Mrs. Elbert MacMillan, Winston-Salem; Mrs. Ben F. Royal, Morehead City; Mrs. B. Watson Roberts, Durham; Mrs. Reece Berryhill, Chapel Hill; Mrs. R. S. McGeachy, New Bern; Mrs. D. M. Royal, Salemburg; Mrs. C. F. Strosnider, Goldsboro; Mrs. A. L. O'Briant, Raeford; Mrs. A. C. Bulla, Raleigh; Mrs. George Harrell, Winston-Salem; Mrs. Leslie Lee, Kinston.

BOOK REVIEWS

Nervousness, Indigestion and Pain. By Walter C. Alvarez, M.D., Professor of Medicine, University of Minnesota (Mayo Foundation); Consultant in the Division of Medicine, The Mayo Clinic, Rochester, Minnesota. 488 pages. Price, $5.00. New York: Paul B. Hoeber, Inc., Medical Book Department of Harper and Brothers, 1943.

This book is the successor of the author's **Nervous Indigestion**, which was published in 1930; but it has been so greatly enlarged that it is virtually a new book. However, the same delightfully free and easy style is preserved; there is the same common-sense approach to the diagnosis and treatment of the "nervous, psychopathic, poorly adjusted, much troubled or overworked and tired persons;" and throughout is the piquant sauce of the aptest possible quotations.

After explaining the various ways in which emotion can affect the digestive tract, the author tells just how he deals with patients in his office. While he is mindful of the value of laboratory findings, he puts the chief emphasis upon the importance of a good history and a careful physical examination. Numerous helpful hints not found in standard works on physical diagnosis are given. The common and even the uncommon masquerades assumed by disease are exposed. The technique of handling the nervous patient is explained: how to win his confidence, how to help him overcome his groundless fears, and how to recognize the ones who are therapeutically hopeless.

This reviewer has recommended Alvarez's **Nervous Indigestion** to scores of young doctors, as the best possible introduction to the practice of medicine. The present volume is far more comprehensive, and can be recommended even more heartily—not only to the young doctor, but to any one who wants to profit by the rich experience of the man who is an acknowledged authority in the field of the functional digestive disorders.

Collected Papers of The Mayo Clinic and The Mayo Foundation. Edited by Richard M. Hewitt, B.A., M.A., M.D.; A. B. Nevling, M.D.; John R. Miner, B.A., Sc.D.; James R. Eckman, A.B.; and M. Katharine Smith, B.A. Volume XXXIV—1942. 999 pages with 176 illustrations. Price, $11.00. Philadelphia and London: W. B. Saunders Company, 1943.

This is the thirty-fourth volume of the Collected Papers which have emanated from the Mayo Clinic, containing papers published from the period December, 1941 to December, 1942. A total of 513 articles form the basis of the volume—77 appearing in full, 59 by abridgement, 47 by abstract, and 330 by title only. Bibliographic references are omitted. The articles are arranged according to subject, and include: Recent Advances in Chemotherapy; Alimentary Tract; Genito-Urinary Organs; Ductless Glands; Blood and Circulatory Organs; Skin and Syphilis; Head, Trunk and Extremities; Chest; Brain; Spinal Cord and Nerves; Radiology and Physical Medicine; Anesthesia and Gas Therapy; and Miscellaneous. As this list indicates, the staff of the Mayo Clinic has maintained a commendable volume of output in all fields of medical interest. The publishers and others responsible for the preparation of the present volume are to be congratulated for a well arranged and excellently prepared volume.

Medical Clinics on Bone Diseases, A Text and Atlas. By I. Snapper, M.D., formerly with the Peiping Union Medical College, Peiping, China. 234 pages, with 190 original photographic reproductions on 30 plates. Price, $10.75. New York: Interscience Publishers, Inc., 1943.

Our knowledge of diseases of the bones has advanced markedly during the past fifteen years. The great diversity of clinical conditions affecting the osseous system are no longer shrouded in obscurity, nor is it necessary to hide our ignorance under the guise of a confused terminology. Dr. Snapper, who himself has contributed to the advancement of our knowledge in this field, has summarized this knowledge in a very comprehensive manner. The present monograph deals with von Recklinghausen's disease (hyperparathyroidism), hyperplasia of the parathyroids secondary to other diseases, rickets and osteomalacia, Paget's disease of the bone, lipoid granulomatosis of bone, Gaucher's disease, and multiple myeloma. These conditions are covered in a very detailed and critical manner.

The only criticism that the reviewer can offer is the fact that other diseases of bone receive no attention, so that the monograph is not all-inclusive, but limits itself to those conditions in which the author presumably has had the widest experience.

The volume has been excellently prepared, with photographs—which are so essential in this type of discussion—being particularly well reproduced on special cardboard plates. All interested in the subject of bone diseases will find the monograph of greatest interest and value.

Essentials of Pathology. By Lawrence W. Smith, M. D., Professor of Pathology, Temple University School of Medicine, and Edwin S. Gault, M.D., Associate Professor of Pathology, Temple University School of Medicine. With a foreword by James Ewing, M.D., Memorial Hospital, New York. Ed. 2. 904 pages, with index. Price, $10.00. New York: D. Appleton-Century Company, Inc.

It is only rarely that writers of textbooks abandon the traditional methods of their predecessors and inaugurate an entirely new approach to their subject. Smith and Gault introduced just such an innovation in the first edition of their textbook of Pathology, and the appearance of this second edition is evidence of the success of their venture. Instead of following the abstract methods of the usual text of Pathology, Smith and Gault introduced the use of case reports which are interpreted in the light of gross pathological data and according to the methods of histopathology. This has resulted in a text which is practical and which will appeal to the general practitioner as well as to the medical student. A total of 295 case histories are given as the basis for the text. The book consists of three parts: (1) General Pathology, (2) Oncology and (3) Systemic Pathology. More space is devoted to cancer than is the case in the usual text, and throughout the book emphasis is placed on diseases of practical importance. Pathology is the cornerstone upon which the practice of medicine and surgery is based, and the present text may be recommended to the general practitioner as well as to the specialist who desires a readable, up-to-date text on this basic subject.

Barometric Pressure, Researches in Experimental Physiology. By Paul Bert. Translated from the French by Mary Alice Hitchcock, M.A., formerly Professor of Romance Languages, University of Akron, and Fred A. Hitchcock, Ph.D., Associate Professor of Physiology, Ohio State University. 1055 pages. Price, $12.00. Columbus, Ohio: College Book Company, 1943. With a foreword by John F. Fulton, Professor of Physiology, Yale University.

As was the case with the work of Vesalius, Harvey, Boyle, and Faraday, many years had to elapse before the significance of Paul Bert's work on the physiological effects of variations in barometric pressure could be appreciated. Today with men flying daily into the stratosphere, the physiology of high altitude has become of primary practical importance.

Paul Bert, who was born in 1833 and died in 1886, was the successor of Claude Bernard at the Faculte' des Sciences of Paris, and published his classic monograph on respiratory physiology in 1874. The Hitchcocks and the publishers have made a notable contribution to medical literature by making Bert's classic work available in an English translation. Aside from its historical interest the book can be read with enjoyment by all interested in aviation physiology and high altitude ascents. To the former, the clear descriptions of Bert's experiments in pressure chambers, and to the latter his discussion of early ascents in balloons and of experiences in mountain climbing will make fascinating reading.

Gastro-Enterology, Volume I: The Esophagus and the Stomach. By Henry L. Bockus, M.D., Professor of Gastro-Enterology, University of Pennsylvania Graduate School of Medicine. 831 pages. Philadelphia: W. B. Saunders Company, 1943.

The first volume of perhaps the most comprehensive work on gastro-enterology yet published is a credit both to its author and to its publisher. The book is not a compendium of the opinions of others, but is based upon the author's own rich experience in treating patients with digestive disorders. The various organic and functional conditions that may affect the upper part of the digestive tract, and their etiology, diagnosis and treatment are discussed in detail. The illustrations—many of them colored—add greatly to the word-pictures drawn by the author.

If the remaining two volumes are worthy companions of the first one, the trio will constitute a system of gastro-enterology that will be of the greatest value to the doctor interested in this highly important field of medicine.

Methods of Treatment. By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals; and Edward H. Hashinger, A.B., M.D., Clinical Professor of Medicine, Medical Department of Kansas; Attending Physician, University of Kansas Hospitals; Attending Physician, St. Luke's Hospital, Kansas City, Mo. Ed. 8. 1033 pages. Price, $10.00. St. Louis: C. V. Mosby Company, 1943.

The fact that Clendening's **Methods of Treatment** has gone through eight editions in less than twenty years is proof enough that it has filled a long felt need. The popularity of this book is based upon the care with which therapeutic measures are evaluated, the balance maintained between adequate description and excessive detail, and—above all—the real literary style which makes reading it a pleasure instead of a task. Logan Clendening is one of the true medical philosophers of our generation, and his genius permeates even a work on therapeutics. The book is a splendid investment for any practitioner or internist.

Injuries of the Skull, Brain and Spinal Cord. Edited by Samuel Brock, M.D., Professor of Neurology at New York University. Ed. 2. Price, $7.00. 616 pages with 78 figures. Baltimore: The Williams and Wilkins Company, 1943.

The second edition of this successful volume is presented to bring our knowledge of these important subjects up to date. The book follows the general plan of its previous edition. It is an integrated series of articles by men outstanding in neurology and allied fields. The material is presented in a readable style. Brief case histories are used to illustrate points in diagnosis and to emphasize possible sequelae. The photographs are well chosen. Treatment is clearly defined. The medicolegal aspects of head injuries are discussed at some length. This edition contains a chapter devoted to electroencephalography and its application in the study of damage to the brain.

Brock's **Injuries of the Skull, Brain and Spinal Cord** is highly recommended to all interested in this important aspect of medicine.

A Synopsis of Clinical Syphilis. By James Kirby Howles, B.S., M.D., M.M.S., Professor of Dermatology and Syphilology, and Director of the Department, Louisiana State University School of Medicine; Senior Visiting Physician, Charity Hospital of Louisiana at New Orleans; Visiting Physician, French Hospital, Mercy Hospital, Hotel Dieu, Southern Baptist Hospital and Touro Infirmary. 671 pages, with 121 text illustrations and 2 color plates. Price, $6.00. St. Louis: The C. V. Mosby Company, 1943.

The term "synopsis" is scarcely descriptive of the present volume, for it covers an amount of material which compares favorably with many of the regular texts on the subject. A complete coverage of the subject of clinical syphilis would entail a discussion of almost all medicine, for the disease may affect all bodily tissues and may mimic practically all other diseases. The author has covered the clinical aspects of the subject very adequately, describing in a concise yet readable fashion the essential facts necessary for the diagnosis and treatment of clinical syphilis. The book can be recommended without reservation for the general practitioner, who needs to be ever alert to the presence of the great dissimulator among diseases, and to be prepared to carry out the necessary treatments in a given case.

The Microscope and Its Use. By F. J. Munoz, Technical Microscope Consultant, in collaboration with Dr. Harry A. Charipper, Professor of Biology, New York University. 334 pages, with more than 100 illustrations. Price, $2.50. Brooklyn, New York: Chemical Publishing Company, Inc., 1943.

The authors of this book have succeeded in accumulating in a rather small volume an amazing amount of practical information regarding the microscope which should prove to be of considerable value to both teachers and students of microscopic science. After reading this book, one realizes how little information is generally available to medical students relative to the use and structure of an instrument which has become so important in modern medicine.

In addition to discussing the use and care of the microscope, the authors have included a brief section on the history of the instrument, as well as numerous helpful hints regarding the use of the microtome and the innumerable accessories which are available for microscopic work.

Although this book is directed primarily to the biological sciences, there are chapters which deal with the metallurgical microscope and the polarizing microscope. These increase its general usefulness.

The authors have taken into consideration the fact that such a book might be used to its greatest advantage by teachers and students and have therefore discussed the various subjects in such terms that they may be readily understood.

After a period of regression between the two wars, the number of tuberculosis cases in Sweden is once more increasing, and the health authorities have launched a nation-wide anti-tuberculosis campaign. Mass radiography and vaccination with BCG are the foremost measures suggested. At first everyone who has anything to do with children, passenger traffic and foodstuffs would be subject to these precautions which would later be extended to women and adolescents in industry. News item from The Lancet, Oct. 3, 1942.

Monograph on Lymphogranuloma Venereum

Noteworthy contributions to the detection and differential diagnosis of lymphogranuloma venereum are those of Rake, McKee and Shaffer, who have cultivated the agent in the yolk sac of the embryonated chicken's egg and obtained concentrated suspensions of elementary bodies. In this manner a highly purified and specific antigen, known as Lygranum S.T. has been prepared which is rapidly supplanting antigens prepared from either human pus or mouse brain. These workers alone, and in collaboration with Dr. A. W. Grace, have used the yolk sac antigen for the complement-fixation testing of serum suspectedly infected patients. The specificity and sensitivity of this antigen (Lygranum C.F.) provides an additional means of detecting early cases of lymphogranuloma venereum.

In the course of investigations involving these tests, there accumulated at the Squibb Institute for Medical Research a considerable mass of information concerning the properties of the causative agent, the epidemiology and clinical aspects of the disease. To facilitate the work of investigators and teachers in this field, and perhaps to encourage the interest of potential investigators, practicing physicians and health officers, it was decided to compile and publish the information at hand. The result is a 32-page publication entitled Lymphogranuloma Venereum—a Monograph. The value of the book is enhanced by maps, charts and numerous illustrations in color.

The Monograph is available gratis to physicians and to public health officials, and will be a valuable addition to medical college libraries. Those who request copies should enclose their professional card or use their professional letterhead.

Dr. Charles F. McKhann, who has for several years been on the faculty of the University of Michigan, has resigned from that institution to accept a position as Assistant to the President of Parke, Davis and Company. Dr. McKhann will devote his time entirely to the scientific activities of the company. He will assume his new duties October 15.

At the University, Dr. McKhann has held the positions of Professor of Pediatrics and Communicable Diseases in the Medical School, and Professor of Maternal and Child Health in the School of Public Health. He has also acted as Consultant to the Secretary of War in the Control of Epidemic Diseases.

Dr. McKhann has had an interesting and exceptional background of experience. The summer of 1941, previous to coming to the University of Michigan, he acted as Consultant to the Board of Health, Territory of Hawaii. From 1936 to 1940 he held the position of Associate Professor of Pediatrics and Communicable Diseases at Harvard Medical School and Harvard School of Public Health. Before that he spent a year as Visiting Professor of Pediatrics and Communicable Diseases at Peiping Union Medical College, Peiping, China.

Since 1930 he has conducted and directed research on communicable diseases, immunology, renal diseases, nutritional diseases, and on certain phases of toxicology. He developed and introduced immune globulin and has contributed to the development of several other products.

Dr. McKhann is a member of the Michigan State Medical Society, American Medical Association, American Society for Clinical Investigation (Vice-President, 1943), American College of Physicians, American Academy of Pediatrics, Society for Pediatric Research (President, 1936) and American Public Health Association.

Amebiasis

The incidence of amebiasis has been shown to be greater than was formerly supposed, and there is reason to believe that the disease may become even more prevalent when large numbers of troops begin to return home from the tropics. Surveys collected before the war revealed that more than one in ten subjects harbored **E. histolytica.** It would seem reasonable, therefore, that whenever intestinal symptoms form a part of the clinical picture, the diagnosis should not be considered complete until the possibility of amebiasis has been ruled out. Chronic, uncomplicated intestinal amebiasis is the most frequent type, and it includes the carrier as well as the individual with recurrent or mildly persistent symptoms. Pulvules Carbarsone, Lilly, each containing 0.25 Gm., may be given orally at the rate of one pulvule two or three times daily to a total of twenty doses (5 Gm.). This routine may ordinarily be repeated several times, provided intervals of ten days are allowed between courses and the urine and liver show no evidence of damage. Bed rest is not necessary in this group.

The Johnson & Johnson Research Foundation, New Brunswick, New Jersey, announced recently that the following statement of the Journal of the American Medical Association has been released for publication:

Dr. Ross G. Harrison, Chairman of the National Research Council, has announced the acceptance by the National Academy of Science—National Research Council—of a grant from the Johnson & Johnson Research Foundation in the amount of $75,000. The grant was made to enable the Division of Medical Sciences of the Council, under the chairmanship of Dr. Lewis H. Weed, to gather medical information pertaining to the war effort and to disseminate summaries. The program of the Division of Medical Sciences of the National Research Council contemplates coverage of the various medical reports and bulletins which emanate from civilian and military activities throughout the world. The enterprise should fill a much needed gap in the war effort in medicine; for one of the greatest difficulties encountered in medicine today lies in providing adequate up-to-date information to the medical officers of the armed services both in this country and abroad and in making the experience of war medicine available as far as possible to civilian physicians.

The Johnson & Johnson Research Foundation appropriation to the National Research Council becomes immediately available; in accordance with present plans it will be utilized in the period up to June 30, 1945. A central office will be established in Washington and reporters will be appointed in various foreign countries, so that a staff of special observers abroad will be working under the direction of the central office. The various theatres of operation present medical problems in which climate, season of year, distribution of insects, distribution of disease, all play different roles. Reports from widely separated parts of the world will be of greatest medical importance and it is hoped that with the combined effort much of significance will be achieved.

Many of the observations and laboratory studies cannot be released today because of the classified information contained in them—information of military importance. Such materials will be carefully held until release may be made. Every effort will be made, however, to issue bulletins containing current advances in medical practice and medical research which are not military secrets and which should be made available to the medical profession at the earliest possible date. This collection will form basic source material for later summaries of medical experience in the present world war. Not only data from the armed forces will be included but also material from other Federal agencies and from civilian enterprises.

The informational service will be under the direction of the Committee on Information of the Division of Medical Sciences which includes Dr. Morris Fishbein, Chairman, Dr. John F. Fulton, Dr. Richard M. Hewitt and Dr. Robert N. Nye, with liaison officers appointed by the three Surgeons General.

The Johnson & Johnson Research Foundation was established January 1, 1940 as a non-profit philanthropic organization by Johnson & Johnson, New Brunswick, N. J., with the express purpose of supporting research and development of products to serve the medical profession. It has made appropriations for both fundamental and developmental investigations and is currently sponsoring about one hundred projects located in twenty-eight universities. The fields of medical interest which have largely been supported are pharmacology (including antiseptics), allergy, physiological studies in pediatrics and human fertility.

A streamlined process of Penicillin production, resulting from two years' research in the Parke-Davis Laboratories, promises to cut down substantially the production time required, according to Homer C. Fritsch, General Manager of the Company.

"The present method of producing penicillin requires from 6½ to 14 days," he said in an interview recently. "We have advanced our methods to where we can produce in 2½ to 3 days without using cumbersome equipment."

This constitutes a significant forward step, since the bottle-neck in the Penicillin situation, to date, has been the fact that the drug has been available only in comparatively small amounts. Parke, Davis & Company is now regularly supplying Penicillin to the government and has recently expanded its facilities for producing the new "miracle" drug.

Care of Wounded by Army-Navy Medical Services Extolled by Squibb in Series of Advertisements

The bravery and skill of the Army and Navy medical services and the marvelous new drugs that are saving the lives, rehabilitating the bodies and alleviating the pain of men wounded in action are extolled in a series of advertisements in national magazines sponsored by E. R. Squibb & Sons, manufacturing chemists.

The advertisements appear under the generic title of "Miracles of the Battlefront," and are designed to acquaint the public with the heroic work of the medical services of the Army, Navy, Coast Guard and Marines, as well as call attention to some of the life-saving, pain-relieving drugs that are being used. The advertisements were planned and prepared with the cooperation of the medical services. Six insertions, extending into 1944, are scheduled in "The Saturday Evening Post," "Good Housekeeping," "Life" and "Hygeia."

Someone said that of all the millions of species of living organisms on the earth the two about which most has been written were man himself and—the tubercle bacillus. Biological Aspects of Infectious Disease. F. M. Burnet, M.D. 1940.

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M & R Laboratories VI
Ortho Products XXX
Parke, Davis and Company XXVIII
Philip Morris & Co., Ltd., Inc. IX
Physicians Casualty Assn.
Physicians Health Assn. XXV
Pinebluff Sanitarium III
Powers and Anderson, Inc. XXV
R. J. Reynolds Tobacco Co. XI
S. M. A. Corp. XXXI
Smith, Kline & French XX
Spencer Corset Company, Inc. XXII
Stuart Circle Hospital XXVII
Thompson Homestead School XXIX
Tucker Hospital XXVI
Upjohn Co. VIII
Wachtel's, Inc. XXV
Westbrook Sanatorium XXIV
Winchester Surgical Supply Co.
Winchester-Ritch Surgical Co. III
Winthrop Chemical Co., Inc. XIX
Wyeth, John & Bro. II

Pharmacy's role in World War II and its success in making America independent of foreign sources for supplies of vital drugs, such as digitalis—modern medicine's most commonly used heart stimulant—were keynote topics at unveiling ceremonies for the fifth painting in the famed "Pioneers of American Medicine" series at Philadelphia November 5, during National Pharmacy Week.

A distinguished audience of 250 pharmacists, medical men and scientists gathered from all parts of the United States were on hand for the event, which paid tribute to William Proctor, Jr., world-famous for his work in the standardization of drugs.

The 1943 painting is entitled "The Father of American Pharmacy" and depicts Proctor (1817-1872), studying a formula for the standardization of drugs while at work with an assistant in his laboratory.

Principal speaker at the unveiling, held at a dinner in the Barclay, was Dr. Ivor Griffith, Ph.M., Sc.D., F.R.S.A., president of the American Pharmaceutical Association and president of the Philadelphia College of Pharmacy and Science. A special exhibit of drug producing plants formerly imported, now cultivated in the United States, was shown at the unveiling.

Back in 1917, while a Navy medical corps pharmacist at Brest, France, Frank F. Law, president of John Wyeth & Brother, Inc., conceived the plan of creating an enduring monument in oils to American medical pioneers when he witnessed the marvels of American surgery among battle wounded. Law determined then, that if he ever got the opportunity, he would erect such a monument. His dream came true five years ago when, at his behest, the Wyeth company commissioned Cornwell to begin the series.

Other paintings in the series, which are loaned to medical schools and medical societies, are "The Dawn of Abdominal Surgery," a tribute to Dr. Ephraim McDowell, depicting the world's first successful ovariotomy; "Beaumont and St. Martin," honoring Dr. William Beaumont, who pioneered in the study of the stomach's digestive functions; "Osler at Old Blockley", in honor of Sir William Osler, pioneer teacher of clinical medicine, and "Conquerors of Yellow Fever," a tribute to Drs. Walter Reed and Carlos Finley, whose work made possible construction of the Panama Canal, vital wartime lifeline.

Twelve paintings in the series are contemplated, one to be unveiled each year. Cornwell, whose studio is in Alhambra, Calif., will attend the unveiling.

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